November 6, 2002

Re: ALCOA - Warrick Power - 173 - 16275 - 00002

TO: Interested Parties / Applicant

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within (18) eighteen days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) the date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for consideration at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosure

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

November 6, 2002

Mr. Peter Dequattro, Power Plant Manager
Alcoa Power Generating Inc. - Warrick Power Plant
P.O. Box 10, Bldg. 860E
Newburgh, IN 47629-0010

Re: Significant Source Modification No:
173-16275-00002

Dear Mr. Dequattro:

Alcoa Power Generating Inc. - Warrick Power Plant applied for a Part 70 Operating Permit on September 19, 1996 for an electricity generation source. An application to modify the source was received on August 5, 2002. Pursuant to 326 IAC 2-7-10.5(f)(8), the following emission units are approved for construction at the source:

Low NO_X burners for Boilers #1 - #3 combusting bituminous coal and/or natural gas.

The Significant Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3). If there are no changes to the proposed construction of the emission units, the source may begin operating on the date that IDEM receives an affidavit of construction pursuant to 326 IAC 2-7-10.5(h). If there are any changes to the proposed construction the source can not operate until an Operation Permit Validation Letter is issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027, press 0 and ask for Michael S. Schaffer, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395, ext. 15 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
MSS/MES
cc: File - Warrick County
U.S. EPA, Region V
Warrick County Health Department
Air Compliance Section Inspector - Scott Anslinger
Compliance Branch - Karen Nowak
Administrative and Development - Lisa Lawrence
Technical Support and Modeling - Michele Boner

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PART 70 SIGNIFICANT SOURCE MODIFICATION
OFFICE OF AIR QUALITY

Alcoa Power Generating Inc. - Warrick Power Plant
4700 Darlington Road
Newburgh, Indiana 47630

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Source Modification No.: 173-16275-00002	
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: November 6, 2002

TABLE OF CONTENTS

D.1 FACILITY OPERATION CONDITIONS - Boilers #1 - #3

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Carbon Monoxide (CO) Limitations [326 IAC 2-2] [40 CFR 52.21] [326 IAC 2-2-5]
D.1.2 NO_X Limitation [326 IAC 2-2] [40 CFR 52.21] [326 IAC 2-2.5-1] [326 IAC 2-1.1-1(13)(A)(iii)]
D.1.3 NO_X Reduction [326 IAC 2-2.5-1] [326 IAC 2-2] [40 CFR 52.21]
D.1.4 US EPA's NO_X SIP Call [326 IAC 10-4-9]
D.1.5 Sulfur Dioxide Limitations [326 IAC 2-2] [40 CFR 52.21]
D.1.6 Warrick County Sulfur Dioxide Emission Limitations [326 IAC 7-4-10(a)(2)]
D.1.7 Opt-in Acid Rain SO_2 Emission Limits [326 IAC 21]
D.1.8 Particulate Matter Limitation (PM) [326 IAC 6-2-3]
D.1.9 Temporary Alternative Opacity Limitations [326 IAC 5-1-3]
D.1.10 Discontinuation of Natural Gas Co-fire
D.1.11 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

Compliance Determination Requirements

D.1.12 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]
D.1.13 NO_X Emissions Reduction Verification
D.1.14 Sulfur Dioxide (SO_2) [326 IAC 7-4-10(a)(2)] [326 IAC 2-2] [40 CFR 52.21]
D.1.15 Nitrogen Oxides Monitoring Requirement [326 IAC 10-4-12(b) and (c)] [40 CFR 75]
D.1.16 Continuous Emissions Monitoring [326 IAC 3-5] [326 IAC 12]
D.1.17 Low NO_X Burners with Over Fire Air
D.1.18 Continuous Opacity Monitoring [326 IAC 3-5] [326 IAC 12]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.19 Nitrogen Oxides Budget Permit Application Submittal Requirement [326 IAC 10-4-4(a)(1)]
D.1.20 Record Keeping Requirements
D.1.21 Reporting Requirements

E Title IV CONDITIONS - Boilers #1 - #3

Acid Rain Program

E.1 Acid Rain Permit [326 IAC 2-7-5(1)(C)] [326 IAC 21]
E.2 Title IV Emissions Allowances [326 IAC 2-7-5(4)]

Certification
Quarterly Reports

SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in Conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary electricity generating source.

Responsible Official:	Power Plant Manager
Source Address:	4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address:	Building 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
General Source Phone Number:	(812) 853-6111
SIC Code:	4911
County Location:	Warrick
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD Rules; Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate low NO_X burners in the following emission units:

(a) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #1, commenced operation in April 1960, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting to Stack 241, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(b) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #2, commenced operation in January 1964, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting fifty percent (50%) to Stacks 241 and 242, each, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(c) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #3, commenced operation in October 1965, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting to Stack 242, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source modification does not include any insignificant activities as defined in 326 IAC 2-7-1(21).

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability); and

(c) It is an affected source under Title IV (Acid Deposition Control) of the Clean Air Act, as defined in 326 IAC 2-7-1(3).

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)] [326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.4 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

(a) The attached affidavit of construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.

(b) If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.

(c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

(d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

(e) In the event that the Part 70 application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:

(1) If the Part 70 draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Part 70 draft.

(2) If the Part 70 permit has gone thru final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go through a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Part 70 permit at the time of issuance.

(3) If the Part 70 permit has not gone through public notice, but has not gone through final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Part 70 permit, and the Title V permit will be issued after EPA review.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) when operation begins, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP and the PMP extension notification do not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation.

The submittal of the PMP and the PMP extension does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this approval:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.6 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.7 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ, not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.11 Maintenance of Continuous Opacity Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous opacity monitoring systems (COMS) and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

(b) In the event that a breakdown of a continuous opacity monitoring system occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.

(c) Whenever a continuous opacity monitor (COM) is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, a calibrated backup COM shall be brought online within four (4) hours of shutdown of the primary COM, if

possible. If this is not possible, visible emission readings shall be performed in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of one (1) hour beginning four (4) hours after the start of the malfunction or down time.

(1) If the reading period begins less than one hour before sunset, readings shall be performed until sunset. If the first required reading period would occur between sunset and sunrise, the first reading shall be performed as soon as there is sufficient daylight.

(2) Method 9 opacity readings shall be repeated for a minimum of one (1) hour at least once every four (4) hours during daylight operations, until such time that the continuous opacity monitor is back in operation.

(3) All of the opacity readings during this period shall be reported in the Quarterly Deviation and Compliance Monitoring Reports.

(d) Nothing in this condition, or in Section D of this permit, shall excuse the Permittee from complying with the requirements to operate a continuous opacity monitoring system pursuant to 40 CFR 75, 326 IAC 3-5, 326 IAC 5-1-3 or any other applicable requirement.

C.12 Maintenance of Continuous Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous emission monitoring systems (CEMS) and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

(b) In the event that a breakdown of a continuous emission monitoring system occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.

(c) Whenever a continuous emission monitor other than an opacity monitor is malfunctioning or is down for maintenance or repairs, the following shall be used as an alternative to continuous data collection:

(1) If the CEM is required for monitoring NO_X emissions pursuant to 40 CFR 75 (Title IV Acid Rain program) or 326 IAC 10-4 (NO_X Budget Trading Program), the Permittee shall comply with the relevant requirements of 40 CFR 75 Subpart D - Missing Data Substitution Procedures.

(2) If the CEM is not used to monitor NO_X emissions from a unit subject to requirements of the Title IV Acid Rain program or the NO_X Budget Trading Program, and is down for a period of four (4) hours or more, then supplemental or intermittent monitoring of the parameter shall be implemented as specified in Section D of this permit until such time as the emission monitor system is back in operation.

(d) Nothing in this condition, or in Section D of this permit, shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 40 CFR 75 and CP 173-2087-00002, issued December 9, 1991.

C.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.14 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, Southwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967
Southwest Regional Office Telephone Number: 888-672-8323
Southwest Regional Office Facsimile. Number: 812-436-2572

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.17 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

(a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

Part 2 MACT Application Submittal Requirement

C.18 Application Requirements for Section 112(j) of the Clean Air Act [40 CFR 63.52(e)] [40 CFR 63.56(a)] [40 CFR 63.9(b)] [326 IAC 2-7-12]

(a) The Permittee shall submit a Part 2 MACT Application in accordance with 40 CFR 63.52 (e)(1). The Part 2 MACT Application shall meet the requirements of 40 CFR 63.53(b).

(b) Notwithstanding paragraph (a), the Permittee is not required to submit a Part 2 MACT Application if the Permittee no longer meets the applicability criteria of 40 CFR 63.50 by the application deadline in 40 CFR 63.52(e)(1). For example, the Permittee would not have to submit a Part 2 MACT Application if, by the application deadline:

(1) The source is no longer a major source of hazardous air pollutants, as defined in 40 CFR 63.2;

(2) The source no longer includes one or more units in an affected source category for which the U.S. EPA failed to promulgate an emission standard by May 15, 2002; or

(3) The MACT standard or standards for the affected source categories included at the source are promulgated.

(c) Notwithstanding paragraph (a), pursuant to 40 CFR 63.56(a), the Permittee shall comply with an applicable promulgated MACT standard, including the initial notification requirements of the MACT standard, in accordance with the schedule provided in the MACT standard, if the MACT standard is promulgated prior to the Part 2 MACT Application deadline. The MACT requirements include the applicable General Provisions requirements of 40 CFR 63, Subpart A. Pursuant to 40 CFR 63.9(b), the Permittee shall submit an initial notification not later than 120 days after the effective date of the MACT, unless the MACT specifies otherwise. The initial notification shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

United States Environmental Protection Agency, Region V
Director, Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Boilers #1 - #3

(a) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #1, commenced operation in April 1960, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting to Stack 241, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(b) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #2, commenced operation in January 1964, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting fifty percent (50%) to Stacks 241 and 242, each, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(c) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #3, commenced operation in October 1965, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting to Stack 242, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Carbon Monoxide (CO) Limitation [326 IAC 2-2] [40 CFR 52.21] [325 IAC 2-2-5]

(a) Upon start-up of the low NO_X burners associated with Boilers #1 - #3, carbon monoxide (CO) emissions exhausted through Stacks 241 and 242 shall not exceed 1,049.9 tons per twelve (12) consecutive month period, each, with compliance determined at the end of each month, equivalent to less than 0.118 pounds per million British thermal unit heat input.

(b) Any change or modification that increases the emission rate of CO from Stacks 241 or 242 to more than 239.7 pounds per hour, shall require prior IDEM, OAQ approval.

D.1.2 NO_X Limitation [326 IAC 2-2] [40 CFR 52.21] [326 IAC 2-2.5-1] [326 IAC 2-1.1-1(13)(A)(iii)]

Pursuant to 326 IAC 2-2 and 40 CFR 52.21, NO_X emissions from Boilers #1 - #3 shall not exceed a total of 15,391 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

D.1.3 NO_X Reduction [326 IAC 2-2.5-1] [326 IAC 2-2] [40 CFR 52.21]

(a) In order to comply with the requirements of 326 IAC 2-2.5-1, Alcoa Power Generating Inc. - Warrick power plant shall establish the following:

(1) A pounds of NO_X per million British thermal unit heat input emission rate prior to installation of the low NO_X burners with over fire air, and

(2) A pounds of NO_X per million British thermal unit heat input emission rate after the installation of the low NO_X burners with over fire air.

(b) The pounds of NO_X per million British thermal unit emission rates established by paragraphs (a)(1) and (a)(2) shall show a reduction in NO_X emissions from Boilers #1 - #3 pursuant to

326 IAC 2-2.5-1, and render the requirements of 326 IAC 2-2 and 40 CFR 52.21 not applicable.

D.1.4 U.S. EPA's NO_X SIP Call [326 IAC 10-4-9]

(a) Pursuant to the U.S. EPA NO_X SIP Call, starting May 1, 2004, the NO_X emission rate from each boiler during the ozone control season (May 1 through September 30) shall not exceed 0.38 pounds per million British thermal unit heat input capacity.

(b) Pursuant to 326 IAC 10-4-9, starting May 1, 2004, Boilers #1 - #3 have been allocated the following NO_X emissions for each ozone control season (May 1 through September 30):

Boiler	Tons of NO_X Emissions per Ozone Control Season
#1	1,089
#2	1,057
#3	1,026

(c) Any change or modification that changes the NO_X budget allocations for Boilers #1 - #3 shall require prior IDEM, OAQ, approval.

D.1.5 Sulfur Dioxide Limitations [326 IAC 2-2] [40 CFR 52.21]

(a) Pursuant to the August 12, 1996 Administrative Amendment to Condition 7 of CP 173-2087-00002, issued on December 9, 1991, sulfur dioxide emissions from Boilers #1 - #3 shall not exceed a total of 92,777 tons per twelve (12) consecutive month period with compliance determined at the end of each month, equivalent to a total of 46,667 tons of sulfur input per year, based on:

(1) A 365 consecutive day weighted average sulfur dioxide emission rate in pounds per million British thermal units, with compliance determined at the end of each day, and

(2) Operating a continuous monitoring system for sulfur dioxide in accordance with the requirements 326 IAC 3-5-1.

(b) Pursuant to Condition 8(a) of CP 173-2087-00002, issued on December 9, 1991, SO_2 emissions from Boilers #1 - #3 shall not exceed a total of 249.5 tons per day with compliance determined at the end of each day.

D.1.6 Warrick County Sulfur Dioxide Emission Limitations [326 IAC 7-4-10(a)(2)]

Pursuant to 326 IAC 7-4-10(a)(2) and Condition 6 of CP 173-2087-00002, issued December 9, 1991, sulfur dioxide emissions from each boiler shall not exceed 5.11 pounds per million British thermal unit heat input.

D.1.7 Opt-in Acid Rain SO_2 Emission Limits [326 IAC 21]

Pursuant to Condition E.1.4(h) of AR 173-11457-00002, issued on December 28, 1999, sulfur dioxide allowances shall be allocated as follows:

Opt-in SO_2 allowances Allocation Under 40 CFR 74.26 for Boiler #1					
Year	2000	2001	2002	2003	2004
Tons	30,372	30,372	30,372	30,372	30,372

Opt-in SO_2 allowances Allocation Under 40 CFR 74.26 for Boiler #2					
Year	2000	2001	2002	2003	2004
Tons	30,732	30,732	30,732	30,732	30,732

Opt-in SO_2 allowances Allocation Under 40 CFR 74.26 for Boiler #3					
Year	2000	2001	2002	2003	2004
Tons	27,668	27,668	27,668	27,668	27,668

D.1.8 Particulate Matter Limitation (PM) [326 IAC 6-2-3]

Pursuant to Condition 5 of CP 173-2087-00002, issued on December 9, 1991 and 326 IAC 6-2-3, the total particulate emissions from each boiler shall not exceed 0.228 pounds per million British thermal unit heat input.

D.1.9 Temporary Alternative Opacity Limitations [326 IAC 5-1-3]

(a) Pursuant to Condition 4(a) of CP 173-2087-00002, issued on December 9, 1991, the following special temporary exemptions for Boilers #1 - #3 are granted:

(1) During boiler startup opacity may exceed forty percent (40%) for a period up to six (6) hours (from the first time of the first exceedance) or until the flue gas temperature enters the electrostatic precipitator reaches six hundred degrees Fahrenheit (600EF), whichever comes first.

(2) During boiler shutdown opacity may exceed 40% for a total of sixty (60) six (6) minute periods during the six (6) hours interval following the de-energization of the electrostatic precipitator.

(3) During blowing of boiler tubes or air heaters on either Boilers #1 or #2, visible emissions on Stack 241 may exceed forty percent (40%), but not sixty percent (60%) for a total of three (3) six (6) minute average periods per unit per shift.

(4) During blowing of boiler tubes or air heaters on either Boilers #2 or #3, visible emissions on Stack 242 may exceed forty percent (40%), but not sixty percent (60%) for a total of three (3) six (6) minute average periods per unit per shift.

(b) Pursuant to Condition 4(b) of CP 173-2087-00002, issued on December 9, 1991, the following special temporary exemptions for Boilers #4 are granted:

(1) During boiler startup opacity may not exceed forty percent (40%) for a period of up to six (6) hours (from the time of the first exceedance) or until the flue gas temperature enters the electrostic precipitator reaches two hundred ninety degrees Fahrenheit (290EF), whichever comes first.

(2) During boiler shutdown opacity may exceed forty percent (40%) for a total of forty-five (45) six (6) minute periods following the de-energization of the electrostatic precipitator.

D.1.10 Discontinuation of Natural Gas Co-fire

Pursuant to Condition 17 of CP 173-2087-00002, issued December 9, 1991, Alcoa Power Generating Inc. - Warrick Power Plant may, at their option, discontinue use of the natural gas co-fire for Boilers #1 - #3. Written notification must be submitted to IDEM, OAQ if it is decided that use of the gas co-fire system will be discontinued. Gas ignitors on each unit will then be used for startup fuel only. New Source Performance Standards and New Source Review will not be applicable to the removal of these systems.

D.1.11 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for Boilers #1 - #3 and their control devices.

Compliance Determination Requirements

D.1.12 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Within one hundred eighty (180) days after start-up of each boiler with low NO_X burners with over fire air, in order to demonstrate compliance with Condition D.1.1 the Permittee shall perform CO testing on Stacks 241 and 242 utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C- Performance Testing.

D.1.13 NO_X Emissions Reduction Verification

(a) Prior to the start-up of each boiler (Boilers #1, #2, and #3) with low NO_X burners with over fire air, in order to demonstrate compliance with Conditions D.1.3(a)(1) and (b), the Permittee shall calculate the emission rate of NO_X in pounds per million British thermal units from Stacks 241 and 242 based on the most recent valid Relative Accuracy Test Audit (RATA).

(b) Upon start-up of each boiler with low NO_X burners with over fire air, in order to demonstrate compliance with Condition D.1.3(a)(2) and (b), the Permittee shall:

(1) Calculate the emission rate of NO_X in pounds per million British thermal units from Stacks 241 and 242 on an hourly basis for the first ninety (90) days after start-up of the low NO_X burners with over fire air, based on the continuous emissions monitoring system (CEMS) output for each stack, and

(2) Verify that each hourly emission rate of NO_X in pounds per million British thermal units calculated in paragraph (b)(1) of this condition is less than the NO_X emission rate calculated in paragraph (a) of this condition.

(c) After May 1, 2004, in order to demonstrate compliance with Condition D.1.4(a), the Permittee shall calculate the emission rate of NO_X in pounds per million British thermal units from Stacks 241 and 242 on a hourly basis, based on the CEMS output for each stack.

D.1.14 Sulfur Dioxide (SO_2) [326 IAC 7-4-10(a)(2)] [326 IAC 2-2] [40 CFR 52.21]

In order to demonstrate compliance with Conditions D.1.5 and D.1.6, compliance shall be determined for sulfur dioxide (SO_2) emissions pursuant to Conditions 11 and 16 of CP 173-2087-00002, issued on December 9, 1991, 326 IAC 2-2 and 40 CFR 52.21, by:

(a) A daily weighted average and 365 consecutive day weighted average SO_2 emission rate in pounds per million British thermal units, or

(b) A stack test utilizing methods as approved by the Commissioner.

D.1.15 Nitrogen Oxides Monitoring Requirement [326 IAC 10-4-12(b) and (c)] [40 CFR 75]

The Permittee shall meet the monitoring requirements of 326 IAC 10-4-12(b)(1) through (b)(3) that are applicable to their monitoring systems for the NO_X budget units on or before May 1, 2003. The Permittee shall record, report, and quality assure the data from the monitoring systems on and after May 1, 2003 in accordance with 326 IAC 10-4-12 and 40 CFR 75.

D.1.16 Continuous Emissions Monitoring [326 IAC 3-5] [326 IAC 12]

Pursuant to 326 IAC 3-5 (Continuous Monitoring of Emissions) and Condition 13 of CP 173-2087-00002, issued on December 9, 1991, continuous emission monitoring systems for Boilers #1 - #3 shall be calibrated, maintained, and operated for measuring SO_2, NO_X, and O_2 or CO_2, which meet the performance specifications of 326 IAC 3-5-2 and 40 CFR 60.45 or 40 CFR 60.47a.

D.1.17 Low NO_X Burners with Over Fire Air

(a) Upon installation of each low NO_X burner with over fire air, in order to comply with Conditions D.1.2 and D.1.3, the low NO_X burners and over air shall be in operation at all times when Boilers #1 - #3 are in operation, and

(b) Upon installation of the low NO_X burners with over fire air, the low NO_X burners shall replace the existing natural gas burners and the existing natural gas burners shall be removed from service.

D.1.18 Continuous Opacity Monitoring [326 IAC 3-5] [326 IAC 12]

In order to comply with Condition D.1.8, pursuant to 326 IAC 3-5 (Continuous Monitoring of Emissions) the continuous opacity monitoring systems for Boilers #1 - #3 shall be calibrated, maintained, and operated for measuring opacity, which meets the quality assurance requirements of 326 IAC 3-5-5 while Boilers #1 - #3 are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

There are no specific Compliance Monitoring Requirements applicable to Boilers #1 - #3.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.19 Nitrogen Oxides Budget Permit Application Submittal Requirement [326 IAC 10-4-4(a)(1)]

For NO_X budget units that commenced operation prior to January 1, 2001, the NO_X authorized account representative shall submit a complete NO_X budget permit application in accordance with 326 IAC 10-4-7 at least two hundred seventy (270) days prior to May 31, 2004. This application shall be submitted by the NO_X authorized account representative to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

D.1.20 Record Keeping Requirements

(a) To document compliance with Condition D.1.1(a), the Permittee shall record the emission rates of CO from Stack 241 and Stack 242 on a monthly basis.

(b) To document compliance with Condition D.1.2, the Permittee shall record the emission rates of NO_X from Boilers #1 - #4 on a monthly basis. The Permittee shall perform the required record keeping pursuant to 326 IAC 3-5-6.

(c) To document compliance with Conditions D.1.5(a), D.1.6, and D.1.14, the Permittee shall record the calculated daily weighted average and 365 consecutive day weighted average sulfur dioxide emission rates in pounds per million British thermal units. These records shall be retained at the plant for two (2) years.

(d) To document compliance with Condition D.1.5(b), the Permittee shall record the SO_2 emission rates in tons per day from Boilers #1 - #3 on a daily basis. The Permittee shall perform the required record keeping pursuant to 326 IAC 3-5-6.

(e) To document compliance with Condition D.1.7, and Condition E.1.6 of AR 173-11457-00002, issued on December 28, 1999, the Permittee unless otherwise provided, shall keep on site at the opt-in source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by U.S. EPA Administrator or IDEM, OAQ:

(1) The certificate of representation for the designated representative for the opt-in source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the opt-in source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;

(2) All emissions monitoring information collected, in accordance with 40 CFR 75;

(3) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and

(4) Copies of all documents used to complete an opt-in permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.

The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 72 Subpart I, 40 CFR 75, and 326 IAC 21.

(f) To document compliance with Conditions D.1.9 and D.1.18, the Permittee shall, the Permittee shall maintain records in accordance with (1) and (2) below. Records shall be complete and sufficient to establish compliance with the limits established in Condition D.1.9.

(1) All continuous emissions monitoring data, pursuant to 326 IAC 3-5.

(2) All preventive maintenance measures taken.

(g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.21 Reporting Requirements

(a) A quarterly summary of the information to document compliance with Conditions D.1.1(a) D.1.2, D.1.5, and D.1.6 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(b) Pursuant to Condition 14 of CP 173-2087-00002, issued December 9, 1991, a quarterly excess emissions report for SO_2 emissions pursuant to 326 IAC 3-5-7, shall be submitted within thirty (30) days after the end of the quarter being reported.

(c) In order comply with Condition D.1.9, a quarterly excess emissions report for opacity pursuant to 326 IAC 3-5-7, shall be submitted within thirty (30) days after the end of the quarter being reported.

SECTION E TITLE IV CONDITIONS

Facility Description [326 IAC 2-7-5(15)] Boilers #1 - #3

(a) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #1, commenced operation in April 1960, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting to Stack 241, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(b) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #2, commenced operation in January 1964, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting fifty percent (50%) to Stacks 241 and 242, each, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(c) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #3, commenced operation in October 1965, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners with over fire air for NO_X control, exhausting to Stack 242, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Acid Rain Program

E.1 Acid Rain Permit [326 IAC 2-7-5(1)(C)] [326 IAC 21] [40 CFR 72 through 40 CFR 78]

(a) The Acid Rain permit for this source, AR 173-11457-00002, issued on December 28, 1999, is incorporated by reference into this Part 70 Source Modification. Pursuant to 326 IAC 21 (Acid Deposition Control), the Permittee shall comply with all provisions of the Acid Rain permit issued for this source, and any other applicable requirements contained in 40 CFR 72 through 40 CFR 78.

(b) Where an applicable requirement of the Clean Air Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions shall apply.

E.2 Title IV Emissions Allowances [326 IAC 2-7-5(4)] [326 IAC 21]

Emissions exceeding any allowances that the Permittee lawfully holds under the Title IV Acid Rain Program of the Clean Air Act are prohibited, subject to the following limitations:

(a) No revision of this permit shall be required for increases in emissions that are authorized by allowances acquired under the Title IV Acid Rain Program, provided that such increases do not require a permit revision under any other applicable requirement.

(b) No limit shall be placed on the number of allowances held by the Permittee. The Permittee may not use allowances as a defense to noncompliance with any other applicable requirement.

(c) Any such allowance shall be accounted for according to the procedures established in regulations promulgated under Title IV of the Clean Air Act.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: Alcoa Power Generating Inc. - Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-16275-00002

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

9 Test Result (specify) _____

9 Report (specify) _____

9 Notification (specify) _____

9 Affidavit (specify) _____

9 Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Alcoa Power Generating Inc. - Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-16275-00002
Facilities: Boilers #1 - #3
Parameter: Carbon Monoxide Emissions
Limits: Stacks 241 and 242 upon installation of the low NO_X Burners, shall not exceed 1,049.9 tons per twelve (12) consecutive month period, each, with compliance determined at the end of each month, equivalent to less than 0.118 pounds per million British thermal unit heat input.

YEAR: _____

Month	Carbon Monoxide Emissions (tons per stack)		Carbon Monoxide Emissions (tons per stack)		Carbon Monoxide Emissions (tons per stack)	
	Stack 241 This Month	Stack 242 This Month	Stack 241 Previous 11 Months	Stack 242 Previous 11 Months	Stack 241 12 Month Total	Stack 242 12 Month Total

9 No deviation occurred in this month.

9 Deviation/s occurred in this month.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Alcoa Power Generating Inc. - Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-16275-00002
Facilities: Boilers # 1 - #3
Parameter: Nitrogen Oxides Emissions
Limit: Shall not exceed a total of 15,391 tons per twelve (12) consecutive month period with compliance determined at the end of each month

YEAR: _____

Month	Nitrogen Oxides Emissions (tons)	Nitrogen Oxides Emissions (tons)	Nitrogen Oxides Emissions (tons)
	This Month	Previous 11 Months	12 Month Total

9 No deviation occurred in this month.

9 Deviation/s occurred in this month.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Alcoa Power Generating Inc. - Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-16275-00002
Facilities: Boilers #1 - #3
Parameters: Daily and 365 day weighted average SO_2 emission rate
Limits: Sulfur dioxide (SO_2) emissions shall not exceed a total of 92,777 tons per twelve (12) consecutive month period with compliance determined at the end of each month equivalent to 46,667 tons per year, and
SO_2 emissions from each boiler shall not exceed 5.11 pounds per million British thermal unit heat input

Boiler #_____ Months: _____ Year: _____

Day	Weighted Average SO_2 Emission Rate in 1st Month of the Quarter	Weighted Average SO_2 Emission Rate in 2nd Month of the Quarter	Weighted Average SO_2 Emission Rate in 3rd Month of the Quarter	Day	Weighted Average SO_2 Emission Rate in 1st Month of the Quarter	Weighted Average SO_2 Emission Rate in 2nd Month of the Quarter	Weighted Average SO_2 Emission Rate in 3rd Month of the Quarter
1				17			
2				18			
3				19			
4				20			
5				21			
6				22			
7				23			
8				24			
9				25			
10				26			
11				27			
12				28			
13				29			
14				30			
15				31			
16				365 Day Weighted Average SO_2 Emission Rate on Last Day of the 3rd Month of the Quarter			

9 No deviation occurred in a month in the quarter.
9 Deviation/s occurred in a month in the quarter.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Alcoa Power Generating Inc. - Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-16275-00002
Facilities: Boilers #1 - #3
Parameter: SO_2 Emissions
Limit: A total of 249.5 tons per day with compliance determined at the end of each day.

Month: _____ Year: _____

Day	SO_2 Emissions in 1st month of quarter	SO_2 Emissions in 2nd month of quarter	SO_2 Emissions in 3rd month of quarter	Day	SO_2 Emissions in 1st month of quarter	SO_2 Emissions in 2nd month of quarter	SO_2 Emissions in 3rd month of quarter
1				**17**			
2				**18**			
3				**19**			
4				**20**			
5				**21**			
6				**22**			
7				**23**			
8				**24**			
9				**25**			
10				**26**			
11				**27**			
12				**28**			
13				**29**			
14				**30**			
15				**31**			
16				**Total SO_2 Emissions**			

9 No deviation occurred in a month in the quarter.

9 Deviation/s occurred in a month in the quarter.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document for a Part 70 Significant Source Modification

Source Name: **Alcoa Power Generating Inc. - Warrick Power Plant**
Source Location: **4700 Darlington Road, Newburgh, Indiana 47630**
County: **Warrick**
SIC Code: **4911**
Source Modification: **SSM 173-16275-00002**
Permit Reviewer: **Michael S. Schaffer**

On September 30, 2002, the Office of Air Quality (OAQ) had a notice published in the Evansville Courier, Evansville, Indiana, stating that Alcoa Power Generating Inc. - Warrick Power Plant had applied for a Significant Source Modification to Boilers #1 - #3 for installation of low NO_X burners. The notice also stated that OAQ proposed to issue a Significant Source Modification for this operation and provided information on how the public could review the proposed Significant Source Modification and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this Significant Source Modification should be issued as proposed.

On October 11, 2002 Samuel Bruntz of Alcoa Power Generating Inc. - Warrick Power Plant submitted comments on the proposed Significant Source Modification. The comments are as follows: The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded.**

Comment 1:

Condition C.11(c) – Maintenance of Continuous Opacity Monitoring Equipment

The rule citation for this permit condition, i.e., 326 IAC 2-7-5(3)(A)(iii), states that, as necessary, permits shall include requirements concerning the use, maintenance, and where appropriate, installation of monitoring equipment or methods. C.11(d) references rules 326 IAC 3-5 and 326 IAC 5-1-3. In addition, opacity monitoring is required under 40 CFR, Part 75, because these units have "opted-in" to the Acid Rain Program. None of the C.11(d) referenced rules or 40 CFR 75 require opacity monitoring by Method 9 if an opacity monitor is down. Thus, APGI questions the authority under which IDEM is proposing this condition.

Response 1:

A Part 70 source is required to show continuous compliance with all applicable requirements. This is accomplished by the continuous opacity monitoring system (COMS) when Boilers #1 - #3 are operating. When the COMS is down, IDEM, OAQ is not requiring Alcoa to have a backup COMS. Pursuant to 326 IAC 2-7-5(3)(A)(iii), IDEM, OAQ, has determined that the visible emissions readings being performed in accordance with 40 CFR 60, Appendix A, Method 9, is appropriate when a continuous opacity monitoring system (COMS) is down for more than four (4) hours and a backup system has not been brought online within four (4) hours of the shutdown of the primary COMS. Thus, the requirements of C.11(c) has not been deleted. However, the referenced rule of 40 CFR 75 and the phrase "any other applicable requirement" has been added to Condition C.11(d) as follows:

C.11 Maintenance of Continuous Opacity Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(d) Nothing in this condition, or in Section D of this permit, shall excuse the Permittee from complying with the requirements to operate a continuous opacity monitoring system pursu-

ant to **40 CFR 75,** 326 IAC 3-5**,** ~~and~~ 326 IAC 5-1-3 **or any other applicable requirement**.

Comment 2:

Facility Description Information

The installation dates provided for the four boilers are actually the dates upon which each boiler commenced operation. APGI does not have records of the dates when installation commenced.

Response 2:

The commencement dates of Boilers#1 - #3 confirms that Boilers #1 - #4 were installed before the NSPS Subpart D applicability date of August 17, 1971. Therefore, Condition A.2 (a) through (c) and the equipment lists for Sections D.1 and E.1, have been changed to reflect the dates listed as commencement of operation dates instead of installation dates.

In addition, as a result of a meeting between IDEM, OAQ staff and Alcoa on October 18, 2002 and additional information provided by Alcoa on October 21, 2002, the low NO_X burners to be installed for Boilers #1 - #3 will be replacing the existing natural gas burners in Boilers #1 - #3. Furthermore, Alcoa has elected to operate the low NO_X burners with over fire air to comply with the NO_X SIP Call.

Therefore, Condition A.2 (a) through (c) and the equipment lists for Sections D.1 and E.1 have been changed as follows:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate low NO_X burners in the following emission units:

(a) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #1, ~~installed~~ **commenced operation** in April 1960, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners **with over fire air** for NO_X control, exhausting to Stack 241, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(b) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #2, ~~installed~~ **commenced operation** in January 1964, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners **with over fire air** for NO_X control, exhausting fifty percent (50%) to Stacks 241 and 242, each, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(c) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #3, ~~installed~~ **commenced operation** in October 1965, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners **with over fire air** for NO_X control, exhausting to Stack 242, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Boilers #1 - ~~#4~~ **3**

(a) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #1, ~~installed~~ **commenced operation** in April 1960, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners and **with over fire air** for NO_X control, exhausting to Stack 241, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(b) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #2, ~~installed~~ **commenced operation** in January 1964, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners **with over fire air** for NO_X control, exhausting fifty percent (50%) to Stacks 241 and 242, each, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(c) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #3, ~~installed~~ **commenced operation** in October 1965, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners **with over fire air** for NO_X control, exhausting to Stack 242, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

SECTION E TITLE IV CONDITIONS

Facility Description [326 IAC 2-7-5(15)] Boilers #1 - #3

(a) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #1, ~~installed~~ **commenced operation** in April 1960, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners and **with over fire air** for NO_X control, exhausting to Stack 241, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(b) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #2, ~~installed~~ **commenced operation** in January 1964, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners **with over fire air** for NO_X control, exhausting fifty percent (50%) to Stacks 241 and 242, each, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(c) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #3, ~~installed~~ **commenced operation** in October 1965, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners **with over fire air** for NO_X control, exhausting to Stack 242, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Comment 3:

Condition D.1.2 NO_X Limitation and Condition D.1.16 Low NO_X Burners

As currently written, the proposed conditions exceed the authority granted to IDEM in the underlying rules. The air pollution control project for which this application was filed consists of the installation of low NO_X burners, as specified by 326 IAC 2-2.5-1 and 326 IAC 2-1.1-1(13)(A)(iii). The Technical Support Document (TSD) indicates that "under a pollution control project, a showing of reduction in NO_X emissions for the entire year is necessary." The proposed condition cites rules 326 IAC 2-2, 40 CFR 52.21, 326 IAC 2-2.5-1, and 326 IAC 2-1.1-1(13)(A)(iii).

Rule 326 IAC 2-2 incorporates 40 CFR 52.21. Rule 326 IAC 2-2 does not apply, with respect to NO_X, because there will be no increase of NO_X emissions beyond the currently applicable annual limit of 26,080 tons/yr. Note that the 26,080 tons/yr. limit is a PSD avoidance permit limit.

Rule 326 IAC 2-2.5-1 defines the installation of the low NO_X burners as a pollution control project. That rule does not specify that an annual emissions limit must be specified for the pollutant targeted by the project. The rule does require that the project must be environmentally beneficial, based on the criteria of:

(a) An evaluation of the types and quantities of pollutants emitted before and after the project, as well as other relevant environmental factors; and

(b) Projects that result in an increase in pollutants other than those targeted in the project shall be reviewed to determine that the increase has been minimal, and does not result in environmental harm.

Carbon monoxide is not a pollutant targeted by the project, and will increase as a result of the project. Pursuant to section (e), an air quality analysis was submitted for the CO increase.

There is nothing in this rule that can be interpreted to require a permit limit for the pollutant being targeted by the pollution control project.

Rule 326 IAC 2-1.1-1(13)(A)(iii) defines pollution control project as any activity or project which, as its primary purpose, reduces regulated air pollutants from such unit. There is no requirement in this rule that an annual limit be imposed for the targeted pollutant.

Page 9 of the TSD states that "IDEM, OAQ will not require APGI to operate the low NO_X burners to comply with the emission limit." If that is the case, proposed condition D.1.16 should be deleted from the permit, because it requires operation of the low NO_X burners.

Hopefully, the low NOx burners will comply fully with manufacturer guarantees. However, if performance is less than satisfactory, and does not provide all of the NO_X reductions needed to comply with its allocations, APGI would need to procure allocations in marketable transactions. The proposed condition, coupled with the requirement that the low NO_X burners must be in operation to achieve the pollution control project requirements, would set a revised federally enforceable permit limit. Such a revised limit would prevent APGI from using the allowances allocated to it by 326 IAC 10-4-9(d)(3) in marketable transactions, or in buying allowances, due to 326 IAC 10-4-4 (g), i.e.

"No provision of the NO_X budget trading program, a NO_X budget application, a NO_X budget permit, or an exemption under section 3 of their rule shall be construed as exempting or excluding the owners and operators, and to the extent practicable, the NO_X authorized account representative of a NO_X budget source or NO_X budget unit from compliance with any other provision of the applicable

approved state implementation plan, federally enforceable permit, or the CAA."

APGI currently has a federally enforceable NO_X emission limit of 26,080 tons/yr., which is applicable for the plant in its entirety. The NO_X budget program will not cause APGI to exceed this limit. APGI thus requests that proposed condition D.1.16 be removed from the permit, and that Condition D.1.2 be amended as follows:

D.1.2 NO_X Limitation

Total NO_X emissions from units 1-4 shall be limited to 26,080 tons per year, based on a 365 day average rolled on a daily basis, derived from a summation of NO_X CEMS data.

Response 3:

As background, in order for this modification to be exempt from a major PSD modification, the source was required to submit a CO dispersion modeling to show that there would be no significant impact on the National Ambient Air Quality Standard for CO pursuant to 326 IAC 2-2.5-1(e). Pursuant to 326 IAC 2-2.5-1(b), to obtain approval of an air pollution control project under this rule, the Permittee submitted an application for a significant source modification under 326 IAC 2-7-10.5(f)(8) or 326 IAC 2-7-10.5(f)(9) on August 5, 2002. Pursuant to 326 IAC 2-2.5-1(d)(1), the Commissioner shall determine if a project is environmentally beneficial based on an evaluation of the types and quantity of air pollutants emitted before and after the project, as well as other relevant environmental factors.

As a result of a meeting between IDEM staff and Alcoa on October 18, 2002 and additional information provided by Alcoa, on October 21, 2002, Alcoa has elected to replace the existing natural gas burners with low NO_X burners with over fire air, instead of using the low NO_X burners as an alternative to the existing natural gas burners. As a result, the natural gas burners permitted by CP 173-2087-00002, issued on December 9, 1991, upon installation of the low NO_X burners will be removed.

Therefore, replacing the existing burners with low NO_X burners, ensures that there will be a reduction in NO_X emissions for the entire year without reducing the existing NO_X limit established in Condition 9 of CP 173-2087-00002, issued on December 9, 1991. Low NO_X burners are specifically defined in the rule as a pollution control project and therefore, are considered environmentally beneficial.

Boilers #1 - #3 (which are "large affected" units) exhaust to Stacks 241 and 242. Boiler #4 (which is an electric steam generating unit) exhaust to its own stack, Stack 243. Therefore, Boilers #1 - #3 can be assessed independently from Boiler #4. Furthermore, because Boilers #1 - #3 can be assessed independently from Boiler #4 and the purpose of Alcoa's application was to install low NO_X burners in Boilers #1 - #3 as a significant source modification, Boiler #4 has been removed from this modification.

The NO_X limit for Boilers #1 - #3 established in Condition D.1.2(a), has been changed to fifty-nine percent (59%) of the NO_X limit in Condition 9 of CP 173-2087-00002, issued on December 9, 1991. The revised limit in Condition D.1.2(a) is calculated as follows:

Pursuant to Condition 9 of CP 173-2087-00002, NO_X Emissions from Boilers #1 - #4 shall not exceed 26,080 tons per year. The output capacity of Boilers #1 - #4 = 732 megawatts (MW). The output capacity of Boilers #1 - #3 = 432 MW. Therefore, 432 MW represents:

(432 MW / 732 MW) x 100 = 59.02% (percentage output of Boilers #1 - #3), and

26,080 tons (PSD limit for Boilers #1 - #4) x 59.02% (percentage output of Boilers #1 - #3) = 15,391 tons (PSD limit for Boilers #1 - #3)

Due to the preceding, Conditions D.1.2(b) and (c), have been deleted since Boiler #4 has been removed from Condition A.2, the equipment list for Section D.1. In addition Condition D.1.9(b) has also been deleted.

On October 21, 2002, Alcoa indicated that the over fire air will be used in combination with the low NO_X burners. The over fire air in the low NO_X burners can be operated in a reduced state, thus, reducing the amount of NO_X that is being controlled.

In addition, because Alcoa is replacing the existing natural gas burners with low NO_X burners with over fire air instead of adding them as an alternative, the request to delete Condition D.1.16 (now Condition D.1.17) is no longer applicable.

In order to comply with the requirements of 326 IAC 2-2.5-1, Alcoa must be able to show that there will be a reduction in NO_X emissions by replacing the existing natural gas burners with low NO_X burners while the over fire air operates at a reduced state. IDEM, OAQ, therefore, will require Alcoa to establish pre-installation and post installation emission rates in pounds of NO_X per million British thermal unit heat input. Condition D.1.3 has been added to the proposed permit to require Alcoa to verify that the post installation NO_X emission factor is less than the pre-installation emission factor. This verification can use the most recent Relative Accuracy Test Audit (RATA) for Boilers #1 - #3 and the continuous emissions monitoring system (CEMS) output for determining the post-installation emission factor with the low NO_X burners with over fire air. The verification has been added as Condition D.1.13(a) and (b).

Furthermore, pursuant to the NO_X SIP Call, the U.S. EPA guidance establishes a maximum emission rate of 0.38 pounds of NO_X per million British thermal unit heat input. Subsequently, pursuant to 326 IAC 10-4-9, Boilers #1 - #3 have been allocated NO_X emissions for the ozone control season starting May 1, 2004. Conditions D.1.4 and Condition D.1.13(c) have thus been added because Boilers #1 - #3 must comply with requirements of the NO_X SIP Call starting May 1, 2004.

Therefore, Conditions D.1.3, D.1.4, D.1.13 have been added and Condition A.2, the equipment list for Section D.1, Conditions D.1.2, D.1.9 (now Condition D.1.10), D.1.11(now Condition D.1.12), D.1.15 (now Condition D.1.16), D.1.16 (now Condition D.1.17) and D.1.17 (now Condition D.1.18), have been changed as follows:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

~~(d) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #4, installed before 1971, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and currently constructing selective catalytic reduction for NO_x control, exhausting to Stack 243, heat input capacity: 2,827 million British thermal units per hour, heat output capacity: 300 megawatts.~~

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Boilers #1 - ~~#4~~ **3**

~~(d) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #4, installed before 1971, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and currently constructing selective catalytic reduction for NO_x control, exhausting to Stack 243, heat input capacity: 2,827 million British thermal units per hour, heat output capacity: 300 megawatts.~~

D.1.2 NO_X Limitation [326 IAC 2-2] [40 CFR 52.21] ~~[326 IAC 2-2.5-1]~~ [326 IAC 2-1.1-1(13)(A)(iii)]

~~(a)~~ Pursuant to ~~326 IAC 2-2.5-1~~ **326 IAC 2-2 and 40 CFR 52.21**, NO_X emissions from Boilers #1 - #3 shall not exceed a total of ~~11,555~~ **15,391** tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

~~(b) Pursuant to 326 IAC 2-2.5-1, NO_x emissions from Boiler #4 shall not exceed 10,689 tons per twelve (12) consecutive month period with compliance determined at the end of each month.~~

~~(c) As a air pollution control project, a reduction of 3,836 tons of NO_x has been taken from the NO_x limit of 26,080 tons per year in Condition 9 of CP 173-2087-00002, resulting in the NO_x limits in paragraphs (a) and (b) of this condition.~~

D.1.3 NO_X Reduction [326 IAC 2-2.5-1] [326 IAC 2-2] [40 CFR 52.21]

(a) In order to comply with the requirements of 326 IAC 2-2.5-1, Alcoa Power Generating Inc. - Warrick power plant shall establish the following:

(1) A pounds of NO_X per million British thermal unit heat input emission rate prior to installation of the low NO_X burners with over fire air, and

(2) A pounds of NO_X per million British thermal unit heat input emission rate after the installation of the low NO_X burners with over fire air.

(b) The pounds of NO_X per million British thermal unit emission rates established by paragraphs (a)(1) and (a)(2) shall show a reduction in NO_X emissions from Boilers #1 - #3 pursuant to 326 IAC 2-2.5-1, and render the requirements of 326 IAC 2-2 and 40 CFR 52.21 not applicable.

D.1.4 U.S. EPA's NO_X SIP Call [326 IAC 10-4-9]

(a) Pursuant to the U.S. EPA NO_X SIP Call, starting May 1, 2004, the NO_X emission rate from each boiler during the ozone control season (May 1 through September 30) shall not exceed 0.38 pounds per million British thermal unit heat input capacity.

(b) Pursuant to 326 IAC 10-4-9, starting May 1, 2004, Boilers #1 - #3 have been allocated the following NO_X emissions for each ozone control season (May 1 through September 30):

Boiler	Tons of NO_X Emissions per Ozone Control Season
#1	**1,089**
#2	**1,057**
#3	**1,026**

(c) Any change or modification that changes the NO_X budget allocations for Boilers #1 - #3 shall require prior IDEM, OAQ, approval.

D.1.~~9~~ **10** Discontinuation of Natural Gas Co-fire

~~(a)~~ Pursuant to Condition 17 of CP 173-2087-00002, issued December 9, 1991, Alcoa Power Generating Inc. - Warrick Power Plant may, at their option, discontinue use of the natural gas co-fire for Boilers #1 - #3. Written notification must be submitted to IDEM, OAQ if it is decided that use of the gas co-fire system will be discontinued. Gas ignitors on each unit will then be used for startup fuel only. New Source Performance Standards and New Source Review will not be applicable to the removal of these systems.

~~(b) Pursuant to Condition 17 of CP 173-2087-00002, issued December 9, 1991, Alcoa Power Generating Inc. - Warrick Power Plant and Vectran Inc. may, at their option, discontinue use of the natural gas co-fire for Boilers #4. Written notification must be submitted to IDEM, OAQ if it is decided that use of the gas co-fire system will be discontinued. Gas ignitors on each unit will then be used for startup fuel only. New Source Performance Standards and New Source Review will not be applicable to the removal of these systems.~~

D.1.~~11~~ **12** Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Within one hundred eighty (180) days after start-up of **each boiler with** low NO_X burners **with over fire air**, in order to demonstrate compliance with Condition D.1.1 the Permittee shall perform CO testing on Stacks 241 and 242 utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C- Performance Testing.

D.1.13 NO_X Emissions Reduction Verification

(a) Prior to the start-up of each boiler (Boilers #1, #2, and #3) with low NO_X burners with over fire air, in order to demonstrate compliance with Conditions D.1.3(a)(1) and (b), the Permittee shall calculate the emission rate of NO_X in pounds per million British thermal units from Stacks 241 and 242 based on the most recent valid Relative Accuracy Test Audit (RATA).

(b) Upon start-up of each boiler with low NO_X burners with over fire air, in order to demonstrate compliance with Condition D.1.3(a)(2) and (b), the Permittee shall:

(1) Calculate the emission rate of NO_X in pounds per million British thermal units from Stacks 241 and 242 on an hourly basis for the first ninety (90) days after start-up of the low NO_X burners with over fire air, based on the continuous emissions monitoring system (CEMS) output for each stack, and

(2) Verify that each hourly emission rate of NO_X in pounds per million British thermal units calculated in paragraph (b)(1) of this condition is less than the NO_X emission rate calculated in paragraph (a) of this condition.

(c) After May 1, 2004, in order to demonstrate compliance with Condition D.1.4(a), the Permittee shall calculate the emission rate of NO_X in pounds per million British thermal units from Stacks 241 and 242 on a hourly basis, based on the CEMS output for each stack.

D.1.~~15~~**16** Continuous Emissions Monitoring [326 IAC 3-5] [326 IAC 12]

Pursuant to 326 IAC 3-5 (Continuous Monitoring of Emissions) and Condition 13 of CP 173-2087-00002, issued on December 9, 1991, continuous emission monitoring systems for Boilers #1 - **#3**~~4~~ shall be calibrated, maintained, and operated for measuring SO_2, NO_X, and O_2 or CO_2, which meet the performance specifications of 326 IAC 3-5-2 and 40 CFR 60.45 or 40 CFR 60.47a.

D.1.~~16~~ **17** Low NO_X Burners **with Over Fire Air**

(a) Upon installation of each low NO_X burner with over fire air, ~~I~~**i**n order to comply with Condition**s** D.1.2~~(a)~~ **and D.1.3**, the low NO_X ~~B~~**b**urners **with over fire air** shall be in operation ~~to achieve the NO_X reduction and to comply with the pollution control project requirements~~ **at all times when Boilers #1 - #3 are in operation, and**

(b) Upon installation of the low NO_X burners with over fire air, the low NO_X burners shall replace the existing natural gas burners and the existing natural gas burners shall be removed from service.

D.1.~~17~~ **18** Continuous Opacity Monitoring [326 IAC 3-5] [326 IAC 12]

In order to comply with Condition D.1.8, pursuant to 326 IAC 3-5 (Continuous Monitoring of Emissions) the continuous opacity monitoring systems for Boilers #1 - **#3**~~4~~ shall be calibrated, maintained, and operated for measuring opacity, which meets the quality assurance requirements of 326 IAC 3-5-5 while Boilers #1 - **#3**~~4~~ are in operation.

Comment 4:

Condition D.1.3 Sulfur Input Limitation and Condition D.1.4 SO_2 Limitation

By letter dated August 12, 1996, IDEM amended Operating Condition 7 of CP 173-2087, wherein it removed the requirement to monitor and record sulfur input, in favor of compliance monitoring using the CEMS (See Appendix A). Consistent with that amendment, APGI requests that the above referenced conditions be amended, and merged, as follows:

(a) Total units 1-4 SO_2 emissions shall be limited to 157, 206 tons per year, based on:

(1) A 365 day weighted average rolled on a daily basis;

(2) SO_2 emissions shall be determined by a monitoring system installed and operated in accordance with the requirements of 326 IAC 3-1.1-1

(b) Pursuant to Condition 8(a) of CP 173-2087-00002, issued on December 9, 1991, SO_2 emissions from Boilers #1 - #3 shall not exceed a total of 249.5 tons per day with compliance determined at the end of each day.

(c) Pursuant to Condition 8(b) of CP 173-2087-00002, issued on December 9, 1991, SO_2 emissions from Boiler #4 shall not exceed a total of 181.2 tons per day with compliance determined at the end of each day.

Appendix A was the administrative amendment to CP 173-2087-00002, Condition 7, dated August 12, 1996:

Mr. Scott M. Darling
Environmental Engineering Supervisor - Air Programs
Alcoa Generating Corporation
Newburgh, Indiana 47630

August 12, 1996

Re: Permit Amendment

The Office of Air Management (OAM) has received your February 15, 1996 letter (Attachment 1) in which you requested an amendment to a condition of Permit ID No. 173-2087 (Attachment 2). This permit, issued on December 9, 1991, concerned the installation of natural gas burners in Units 1, 2, 3 and 4 for use during boiler starts and for co-firing with coal.

Your proposed amendment deals with the 79,074 tons/year limit on *sulfur input* to Units 1 - 4 as detailed in Operating Condition No. 7 of the permit. Due to the possibility of Alcoa Generating Corporations's (AGC) participation in a Clean Coal Technology project (NOXSO), and the accompanying recovery of elemental sulfur, AGC justifiably wishes to amend Operation Condition No. 7 in order to receive credit for the sulfur recovered. Subsequent conversation with Dan Hancock of my staff have resulted in a possible different approach to an amendment in lieu of this net sulfur averaging method" proposed by AGC. This includes changing the method of compliance from monitoring of *sulfur input* to monitoring of *sulfur dioxide* emitted. This can easily be accomplished by utilizing the plant's stack SO_2/CO_2 monitoring systems installed partially as a condition of CP 173-2087 and then further supplemented due to acid rain requirements. Monitoring capabilities on this level were not available until recently and justify the amendment of this permit.

The OAM Agrees to the amendment of Operation Condition No,. 7 of CP 173-2087 to read as follows:

7. That total Units 1 - 4 sulfur dioxide emission shall be limited to the past two years actual of 157, 206 tons per year (sulfur input equivalent of 79,074 tons per year) based on:

   (a) A 365 day weighted average rolled on a daily basis.

   (b) Sulfur dioxide emission shall be determined by a monitoring system installed and operated in accordance with the requirements of 326 IAC 3-1.1-1.

All references to coal sampling and analysis as a method for compliance determination with 326 IAC 7-4-10 and mass limits set in CP 173-2087 are no longer applicable since CEM's are now the approved method. All reporting requirements contained in the permit are still valid, except that sulfur dioxide emissions on a tons per day basis shall be substituted for sulfur input reporting.

Be advised that the Administrative Orders and Procedures Act (IC 4-21.5-3-7) applies to this decision. This means that potentially-affected persons have a right to file a petition for administrative review if done so within 15 days of this decision.

If you have any questions regarding this issue, please contact Mr. Dan Hancock at (317) 232 - 8429.

Sincerely,
Felicia R. George
Acting Assistant Commissioner

cc: Paul Dubenetzky, OAM
Ed Surla, OAM

Response 4:

The Administrative Amendment to Condition 7 of CP 173-2087-00002, issued on December 9, 1991, dated August 12, 1996 changed the sulfur input limitation to a sulfur dioxide limitation with a sulfur input equivalence. Boiler #4, has been removed from this significant source modification, thus, the sulfur dioxide limitation with sulfur input equivalence has been calculated as follows:

Pursuant to the Administrative Amendment to Condition 7 of CP 173-2087-00002, sulfur dioxide emissions from Boilers #1 - #4 shall not exceed a total of 157, 206 tons per twelve (12) consecutive month period with compliance determined at the of each month, equivalent to a total of 79,074 tons of sulfur input per year.

The output capacity of Boilers #1 - #3 = 432 megawatts or 59.02% (percentage output of Boilers #1 - #3), and 157,206 tons of SO_2 (PSD limit for Boilers #1 - #4) x 59.02% (percentage output of Boilers #1 - #3) = 92,777 tons of SO_2 (PSD limit for Boilers #1 - #3). Therefore, 92,777 tons of sulfur input (equivalent limit for Boilers #1 - #4 x 59.02% (percentage output of Boilers #1 - #3) = 46,667 tons of sulfur input (equivalent for Boilers #1 - #3)

Therefore, Conditions D.1.3 and D.1.4 have been combined as Condition D.1.5 as follows.

D.1.~~3~~**5** Sulfur ~~Input~~ **Dioxide** Limitation**s** [326 IAC 2-2] [40 CFR 52.21]

(a) Pursuant to the **August 12, 1996 Administrative Amendment to** Condition 7 of CP 173-2087-00002, issued on December 9, 1991, ~~the~~ sulfur **dioxide emissions** ~~input to~~ **from** Boilers #1 - ~~#4~~**3 shall not exceed a total of 92,777 tons per twelve (12) consecutive month period with compliance determined at the end of each month,** equivalent to a total of ~~79,074~~ **46,667** tons of sulfur input per ~~twelve (12) consecutive month period, with compliance determined at the end of each month~~ **year, based on:**

(1) A 365 consecutive day weighted average sulfur dioxide emission rate in pounds per million British thermal units, with compliance determined at the end of each day, and

(2) Operating a continuous monitoring system for sulfur dioxide in accordance with the requirements 326 IAC 3-5-1.

~~D.1.4 SO_2 Limitation [326 IAC 2-2] [40 CFR 52.21]~~

~~(a)~~ **(b)** Pursuant to Condition 8(a) of CP 173-2087-00002, issued on December 9, 1991, SO_2 emissions from Boilers #1 - #3 shall not exceed a total of 249.5 tons per day with compliance determined at the end of each day.

~~(b) Pursuant to Condition 8(b) of CP 173-2087-00002, issued on December 9, 1991, SO_2 emissions from Boiler #4 shall not exceed a total of 181.2 tons per day with compliance determined at the end of each day.~~

As a result of the changes to Condition D.1.3, Condition D.1.12 will be deleted as follows:

~~D.1.12 Sulfur Input [326 IAC 2-2-3]~~

~~In order to demonstrate compliance with Conditions D.1.3, sulfur input shall be determined as follows:~~

~~(a) The sulfur input from coal shall be determined from sampling and analysis; and~~

~~(b) Sulfur input from the natural gas shall be based on 0.3 pounds per million cubic feet, unless and until an alternative method is submitted to and approved by IDEM, OAQ.~~

Comment 5:

Condition D.1.5 Warrick County Sulfur Dioxide Limitations

The proposed condition does not include an averaging time period for determining compliance. Pursuant to Condition 16 of CP 173-2087-00002, "compliance for retrofitted units will be determined by a daily weighted average". It is thus requested that the condition be amended by addition of the following sentence:

"Compliance with this limitation will be determined by a daily weighted average."

Response 5:

Pursuant to Condition 16 of CP 173-2087-00002, issued December 9, 1991, compliance with Condition D.1.6 (formerly Condition D.1.5), shall be determined by a daily weighted average or a stack test. Condition D.1.13 can also be used to demonstrate compliance with Condition D.1.5(a)(1) because the SO_2 emissions limitation in Condition D.1.5 is based on a 365 consecutive day weighted average sulfur dioxide emission rate in pounds per million British thermal units. Therefore, D.1.13 (now Condition D.1.14) has been changed as follows:

D.1.~~13~~ **14** Sulfur Dioxide **(SO_2)** [326 IAC 7-4-10(a)(2)] **[326 IAC 2-2] [40 CFR 52.21]**

In order to demonstrate compliance with Condition**s** D.1.5 **and D.1.6**, compliance shall be determined for sulfur dioxide **(SO_2)** emissions pursuant to Conditions 11 and 16 of CP 173-2087-00002, issued on December 9, 1991**, 326 IAC 2-2 and 40 CFR 52.21**, by:

(a) A daily weighted average and ~~thirty (30) day rolling weighted~~ **365 consecutive day weighted average** SO_2 emission rate in pounds per million British thermal units, or

(b) A stack test utilizing methods as approved by the Commissioner.

Comment 6:

Condition D.1.10 Preventive Maintenance Plan

As currently written, this requirement exceeds the authority granted to IDEM in the underlying rules. IDEM must modify this condition related to Preventive Maintenance Plans to indicate that it is required only for its control devices, not for emitting units, to be consistent with the Preventive Maintenance Plan rule set out at 326 IAC 1-6-3.

Condition D.1.10 should thus be modified as follows:

D.1.10. Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the emission control devices at the facility.

Response 6:

A Preventive Maintenance Plan is required for any facility with a control device, not just the control devices themselves. The requirements in 326 IAC 1-6-1 and 326 IAC 1-6-3 specify that the requirement to maintain a Preventive Maintenance Plan is applicable to any facility that is required to obtain

a permit under 326 IAC 2-1-2 (Registration) and 326 IAC 2-1-4 (Operating Permits). Furthermore, IDEM's compliance monitoring guidance states that a compliance monitoring plan is required for an emission unit that has a control device and allowable emissions from that emission unit exceed 10 pounds per hour. However for clarification, Condition D.1.10 (now Condition D.1.11) has been changed as follows.

D.1.~~10~~**11** Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for ~~these facilities~~ **Boilers #1 - #3** and their control devices.

Comment 7:

Conditions D.1.12 and D.1.13 Compliance Determination Requirements for Sulfur Dioxide

Proposed Condition D.1.15 requires Continuous Emissions Monitoring for SO_2.

The proposed conditions are thus unnecessary, and APGI requests that they be removed from the permit.

Response 7:

Condition D.1.12 was deleted (see Response 4) due to the August 12, 1996 Administrative Amendment to Condition 7 of CP 173-2087-00002, which was issued on December 9, 1991, that established a sulfur dioxide limitation with an equivalent sulfur input. Condition D.1.13 (now Condition D.1.14) was not deleted (see Response 5) because Condition 16 of CP 173-2087-00002, issued on December 9, 1991 required compliance with the sulfur dioxide limitation with Condition 6 of that same permit, to be determined by a daily weighted average sulfur dioxide emissions. Therefore, no additional changes are necessary to the proposed permit.

Comment 8:

Condition D.1.18 Nitrogen Oxides Budget Permit Application Submittal Requirement

This application and resulting permit will satisfy many of the requirements for the NO_X budget permit application. It is requested that the NO_X budget permit application be allowed to reference those portions of this application and permit that will also satisfy the NO_X budget requirements.

Response 8:

Pursuant to 326 IAC 10-4-7(c), a NO_X budget permit application shall include specific information in a format prescribed by the IDEM, OAQ. IDEM, OAQ has developed a simple NO_X budget permit application form and requests that the Permittee use the application form provided by IDEM, OAQ. The application form provided by IDEM, OAQ requires basic source information and a certification statement and does not require that the source include detailed information that would be simpler to reference than to include in the form provided.

Comment 9:

Condition D.1.19 (c) Sulfur Input Recordkeeping Requirements

By letter dated August 12, 1996, IDEM amended the method of compliance from monitoring of sulfur input to monitoring the amount of sulfur dioxide emitted. A copy of this letter is included in Appendix A. APGI thus requests that this condition be removed from the permit.

Response 9:

As a result of the Administrative Amendment to Condition 7 of CP 173-2087-00002, issued on December 9, 1991, and Responses 3 and 4, Condition D.1.19(c) has been deleted and Condition D. 1.19 (now Condition D.1.20(c)) has been changed as follows:

D.1.~~19~~ **20** Record Keeping Requirements

~~(c) To document compliance with Conditions D.1.3 and D.1.12, the Permittee shall record the sulfur input from Boilers #1 - #4 on a monthly basis. The Permittee shall perform the required record keeping pursuant to 326 IAC 3-5-6.~~

~~(e)~~ **(c)** To document compliance with Conditions D.1.5**(a), D.1.6,** and D.1.~~13~~ **14**, the Permittee shall record the calculated daily weighted average and **365 consecutive day weighted average** ~~thirty (30) day rolling weighted average~~ sulfur dioxide emission rates **in pounds per million British thermal units**. These records shall be retained at the plant for two (2) years.

(d) To document compliance with Condition~~s~~ D.1.~~4~~**5(b)**, the Permittee shall record the SO_2 emission rates~~ of SO_2~~ **in tons per day** from Boilers #1 - ~~#4~~**3** on a daily basis. The Permittee shall perform the required record keeping pursuant to 326 IAC 3-5-6.

~~(f)~~ **(e)** To document compliance with Condition D.1.~~6~~**7**, and Condition E.1.6 of AR 173-11457-00002, issued on December 28, 1999, the Permittee unless otherwise provided, shall keep on site at the opt-in source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by U.S. EPA Administrator or IDEM, OAQ:

(1) The certificate of representation for the designated representative for the opt-in source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the opt-in source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;

(2) All emissions monitoring information collected, in accordance with 40 CFR 75;

(3) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and

(4) Copies of all documents used to complete an opt-in permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.

The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 72 Subpart I, 40 CFR 75, and 326 IAC 21.

~~(g)~~ **(f)** To document compliance with Conditions D.1.~~8~~**9** and D.1.~~17~~ **18**, the Permittee shall, the Permittee shall maintain records in accordance with (1) and (2) below. Records shall be complete and sufficient to establish compliance with the limits established in Condition D.1.~~8~~**9**.

(1) All continuous emissions monitoring data, pursuant to 326 IAC 3-5.

(2) All preventive maintenance measures taken.

~~(h)~~ **(g)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Comment 10:

Condition D.1.20 (a) Reporting Requirements

Based on the above comments, APGI requests that the referenced reporting forms be amended, as indicated in Appendix B.

(a) The Quarterly Report Form on Page 23 of 28 of the proposed permit:

(1) The facilities listed be changed to Boilers #1 - #4, and

(2) The NO_X limit be changed from 11,555 tons to 26,080 tons of NO_X

(b) The Quarterly report form for Sulfur Input on Page 25 of 28 of the proposed permit be deleted.

(c) The Quarterly Report Form on Page 26 of 28 of the proposed permit:

(1) The parameter be changed to daily average tons of SO_2 per million British thermal unit heat input , SO_2 tons per day, and 365 rolling total SO_2 tons per 365 days.

(2) The limit be changed to limits as follows:

(A) Each boiler shall not exceed 5.11 pounds per million British thermal unit heat input, daily weighted average basis.

(B) SO_2 emissions shall not exceed 249.5 tons per day from Boilers #1 - #3, total and 249.5 and 181.2 tons per day from Boiler#4,

(C) SO_2 emissions shall not exceed a total of 157,206 tons per twelve (12) consecutive month period with compliance determined at the end of each month equivalent to 79,074 tons of sulfur input per year, and

(D) The table headings be changed to the following:

Day	Daily Average, # SO_2 / mm Btu			SO_2 Tons / day		365 day Rolling Total
	Stack 241	Stack 242	Stack 243	Boilers 1-3	Boiler 4	Tons SO_2 / 365 days Boilers 1-4, combined

Response 10:

As a result of Responses 4 and 5, Condition D.1.20 (now Condition D.1.21) has been changed as follows:

D.1.~~20~~ **21** Reporting Requirements

(a) A quarterly summary of the information to document compliance with Conditions D.1.1(a) D.1.2, ~~D.1.3, D.1.4, and~~ D.1.5, **and D.1.6,** shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) Pursuant to Condition 14 of CP 173-2087-00002, issued December 9, 1991, a quarterly excess emissions report for SO_2 emissions pursuant to 326 IAC 3-5-7, shall be submitted within thirty (30) days after the end of the quarter being reported.

(c) In order comply with Condition D.1.~~8~~**9**, a quarterly excess emissions report for opacity pursuant to 326 IAC 3-5-7, shall be submitted within thirty (30) days after the end of the quarter being reported.

The following changes have been made to the quarterly report forms.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name:	Alcoa Power Generating Inc. - Warrick Power Plant
Source Address:	4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address:	Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.:	SSM 173-16275-00002
Facilities:	Boilers # 1 - #3
Parameter:	Nitrogen Oxides Emissions
Limit:	Shall not exceed a total of ~~11,555~~ **15,391** tons per twelve (12) consecutive month period with compliance determined at the end of each month

~~INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT~~
~~OFFICE OF AIR QUALITY~~
~~COMPLIANCE DATA SECTION~~

~~Part 70 Source Modification Quarterly Report~~

~~Source Name: Alcoa Power Generating Inc. - Warrick Power Plant~~
~~Source Address: 4700 Darlington Road, Newburgh, Indiana 46730~~
~~Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010~~
~~Source Modification No.: SSM 173-16275-00002~~
~~Facility: Boiler #4~~
~~Parameter: Nitrogen Oxides Emissions~~
~~Limit: Shall not exceed a total of 10,689 tons per twelve (12) consecutive month period with compliance determined at the end of each month~~

~~YEAR: _____~~

~~Month~~	~~Nitrogen Oxides Emissions (tons)~~	~~Nitrogen Oxides Emissions (tons)~~	~~Nitrogen Oxides Emissions (tons)~~
	~~This Month~~	~~Previous 11 Months~~	~~12 Month Total~~

~~**9** No deviation occurred in this month.~~

~~**9** Deviation/s occurred in this month.~~
Deviation has been reported on:

Submitted by:

Title/Position:

Signature:

Date:

Phone:

~~Attach a signed certification to complete this report.~~

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Alcoa Power Generating Inc. - Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-16275-00002
Facilities: Boilers #1 - #4
Parameter: Sulfur Input
Limits: Shall not exceed a total of 79,074 tons per twelve (12) consecutive month period with compliance determined at the end of each month

YEAR: _____

Month	Sulfur Input (tons)	Sulfur Input (tons)	Sulfur Input (tons)
	This Month	Previous 11 Months	12 Month Total

9 No deviation occurred in this month.

9 Deviation/s occurred in this month
Deviation has been reported on:

Submitted by:

Title/Position:

Signature:

Date:

Phone:

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Alcoa Power Generating Inc. - Warrick Power Plant
Source Address: 4700 Darlington Road, Newburgh, Indiana 46730
Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010
Source Modification No.: SSM 173-16275-00002
Facilities: Boilers #1 - ~~#4~~**3**
Parameter: Daily and ~~thirty (30) day rolling~~ 365 day weighted average SO_2 emission rate~~s~~
Limit**s**: **Sulfur dioxide (SO_2) emissions shall not exceed a total of 92,777 tons per twelve (12) consecutive month period with compliance determined at the end of each month equivalent to 46,667 tons per year, and**
SO_2 emissions from each boiler shall not exceed 5.11 pounds per million British thermal unit heat input

Boiler #_____Months: _____ Year: _____

Day	Weighted Average SO_2 Emission Rate ~~This Day~~ **in 1st Month of the Quarter**	Weighted Average SO_2 Emission Rate ~~Previous 29 Days~~ **in 2nd Month of the Quarter**	Weighted Average SO_2 Emission Rate ~~30 Day Total~~ **in 3rd Month of the Quarter**	Day	Weighted Average SO_2 Emission Rate ~~This Day~~ **in 1st Month of the Quarter**	Weighted Average SO_2 Emission Rate ~~Previous 29 Days~~ **in 2nd Month of the Quarter**	Weighted Average SO_2 Emission Rate ~~30 Day Total~~ **3rd Month of the Quarter**
1				17			
2				18			
3				19			
4				20			
5				21			
6				22			
7				23			
8				24			
9				25			
10				26			
11				27			
12				28			
13				29			
14				30			
15				31			
16				**365 Day Weighted Average SO_2 Emission Rate on Last Day of the Third Month of the Quarter**			

~~INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT~~
~~OFFICE OF AIR QUALITY~~
~~COMPLIANCE DATA SECTION~~

~~Part 70 Source Modification Quarterly Report~~

~~Source Name: Alcoa Power Generating Inc. - Warrick Power Plant~~
~~Source Address: 4700 Darlington Road, Newburgh, Indiana 46730~~
~~Mailing Address: Bldg. 860E, P.O. Box 10, Newburgh, Indiana 47629-0010~~
~~Source Modification No.: SSM 173-16275-00002~~
~~Facility: Boiler #4~~
~~Parameter: SO_2 Emissions~~
~~Limit: A total of 181.2 tons per day with compliance determined at the end of each day.~~

~~Month: _____ Year: _____~~

~~Day~~	~~SO_2 Emissions in 1st month of quarter~~	~~SO_2 Emissions in 2nd month of quarter~~	~~SO_2 Emissions in 3rd month of quarter~~	~~Day~~	~~SO_2 Emissions in 1st month of quarter~~	~~SO_2 Emissions in 2nd month of quarter~~	~~SO_2 Emissions in 3rd month of quarter~~
~~1~~				~~17~~			
~~2~~				~~18~~			
~~3~~				~~19~~			
~~4~~				~~20~~			
~~5~~				~~21~~			
~~6~~				~~22~~			
~~7~~				~~23~~			
~~8~~				~~24~~			
~~9~~				~~25~~			
~~10~~				~~26~~			
~~11~~				~~27~~			
~~12~~				~~28~~			
~~13~~				~~29~~			
~~14~~				~~30~~			
~~15~~				~~31~~			
~~16~~				~~Total SO_2 Emissions~~			

~~**9** No deviation occurred in a month in the quarter.~~

~~**9** Deviation/s occurred in a month in the quarter.~~
Deviation has been reported on:

Submitted by:

Title/Position:

Signature:

Date:

Phone:

~~Attach a signed certification to complete this report.~~

On October 27, 2002 IDEM, OAQ received comments on the proposed Significant Source Modification from Stephen A. Loeschner. The comments are as follows: The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded.**

Comment 1:

This is comment on a draft 40 CFR 70 style source modification permit, where there is no 40 CFR 70 permit, for Alcoa Power Generating Inc. having some relationship with Vectren Corporation, Vectren Utility Holdings, Inc. and or some other non-natural person with Vectren in their name (““A-V””) to operate its Warrick County fossil fuel fired steam electric plant campus of four units having a total (gross calorific value assumed throughout) 6.898 billion British thermal unit (‘‘BBTU’’) per hour (““hr””) heat input capacity as described in Indiana Department of Environmental Management (““DEM””) draft permit document package 173- 16275- 00002 (““16275””).

CFR cites are the 1 July 2002 edition.

I’’ve some reason to believe that DEM has misspelled Vectren as Vectran.

Of note are the facts that:

(1) Three of the emission units, (Units 1 - 3), totaling approximately 4.071 BBTU / hr, are ““42 USC 7479(1) fossil- fuel fired steam electric plants of more than 1/4 BBTU heat input”” (““SEP””),

(2) Units 1 - 3 are not ““40 CFR 52.21(b)(31) electric utility steam generating units”” (““EUSGU””), and

(3) Emission Unit 4 is a 2.827 BBTU / hr EUSGU as well as a SEP.

Response 1:

The correct spelling of the partial owner of Boiler #4 is Vectren, not Vectran. It was misspelled in the TSD and Condition D.1.9(b) which has been deleted. Boilers #1 - #3 are rated at 1,354 million British thermal units per hour each and Boiler #4 is rated at 2,827 million British thermal units per hour.

Comment 2:

40 CFR 60 inquiry

As response to comment, please publish any and all communications made by A-V, DEM, and U.S. Environmental Protection Agency (““EPA””) pursuant to 40 CFR 60.5 and 60.6 that are specific to A-V.

Identify any and all 40 CFR 60.4 applicability other than DEM’’s Indianapolis address and being within EPA Region V.

Publish the *specific* ““(a)(2) determination”” mentioned on p. 10 of the 16275 Technical Support Document (““TSD””) claiming that low NOx (mixed nitrogen oxides) burners are environmentally beneficial together with the background data on which the claim is based. If there is no specific determination, then halt this process, gather the data, publish it such that the public may review it in reasonable time, receive public comment on the data, and make a determination.

If there is no determination, then require 40 CFR 60.40b(b)(2) compliance concurrent with the modification.

DEM appears to have cited something nonexistent, 40 CFR 60.16(e).

Comment 3:

Pollution Control Project Exception foundation

In determining how much of my comment is actionable, there may be controversy in re the interpretation and applicability of the Pollution Control Project Exception (““PCPE””) from Prevention of Significant Deterioration (““PSD”” 42 USC 7470 *et seq*., 40 CFR 52.21) Major Modification regulation permitting requirements given to EUSGU:

(i) Major modification means any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act....

(iii) A physical change or change in the method of operation shall not include: ... (iii)(h) The addition, replacement or use of a pollution control project at an existing electric utility steam generating unit, unless the Administrator determines that such addition, replacement, or use renders the unit less environmentally beneficial ... (40 CFR 52.21(b)(2) excerpt)

Comment 4:

PCPE is inapplicable to 16275

DEM states on p. 2 of the 16275 TSD that the 9 December 1991 permit 173- 2087-00002 (incorporated herein by reference) Condition 9 allows a total annual NOx emission of 26,080 tons per year (““tpy””) and implicitly stated its intent to apportion that amongst the emission units based on size. DEM allowed the 2.827 / 6.898 fraction as the Unit 4 annual emission limit in 16275 Condition D.1.2(b) as 10,689 tpy NOx and imposed no ““ozone season”” of 1 May through 30 September limit. That is, permit wise, Unit 4 was ““not touched.”” Thus there is a mathematical severing of the EUSGU Unit 4 from the non-EUSGU Units 1 - 3.

With that severing, there is no promotion, or escalation, or benefit attachment that may flow from Unit 4’’s EUSGU status to Units 1 - 3, there is no PCPE applicability to Units 1 - 3, and A-V’’s ““inclusion”” of Unit 4 within its 16275 papers as ““justification”” to consider Unit 1 - 3 modifications has no force in federal law or regulation whatsoever. Whether or not such promotion is allowed in IC and or IAC is not relevant. For example, 326 IAC 2-1.1-1(13)(A)(iii) omits the EUSGU qualification of PCPE. Delegatee DEM, through any amount of IC or IAC, has no authority whatsoever to stretch the definition of the EPA as expressed in PCPE. 40 CFR 60.14(e) ““this part”” means 40 CFR Part 60——not Part 52 containing PCPE. The EUSGU qualification remains, and the Unit 1 - 3 modifications have no such attribute.

Responses 2, 3, and 4:

The comments contained in this Addendum to the TSD are the only comments that IDEM, OAQ received regarding this modification during the 30-day period for public comment.

This significant source modification is being performed as a pollution control project pursuant to 326 IAC 2-2.5-1. Pursuant to 326 IAC 2-2.5-1(a), “the modification, addition, or replacement of a

pollution control project at an existing source shall not constitute a major modification under 326 IAC 2-2-1(x)."

Pursuant to 326 IAC 2-2.5-1(d), the commissioner shall determine if a project is environmentally beneficial based on the following criteria:

(a) An evaluation of the types and quantity of air pollutants emitted before and after the project as well as other environmental factors, and

(b) Projects that result in an increase in pollutants other than those targeted in the project shall be reviewed to determine that the increase in emissions of the other pollutants has been minimized and does not result in environmental harm.

Preceding the finalization of 326 IAC 2-2.5-1, a memorandum dated July 1, 1994, from John S. Seitz, Director of Office of Air Quality Planning and Standards (OAQPS) (MD-10) entitled, "Pollution Control Projects and New Source Review (NSR) Applicability", known as the "Seitz Memorandum", establishes a protocol for which a permitting authority is to determine a pollution control project as environmentally beneficial. This protocol is also reiterated in the IDEM, OAQ Rule Fact Sheet, dated February 2, 2002, entitled "Development of Amendments to Rules Concerning the Prevention of Significant Deterioration Program #97-13(APCB)." The Background Section II of the Seitz Memorandum states the following with regards to safeguarding an exclusion from a major modification:

> "In the WEPCO rule [1992 WEBCO rule making at 57 FR 32314], EPA did not provide any specific definition of the environmentally-beneficial standard, although it did indicate the pollution control project provision 'provides for a case-by-case assessment of the pollution control project's net emissions and overall impact on the environment' [57 FR 32321]. This provision is buttressed by a second safeguard that directs permitting authorities to evaluate the air quality impacts of pollution control projects that could – through collateral emissions increases or changes in utilization patterns – adversely impact local air quality [see 57 FR 32322]."

Case-By-Case Pollution Control Project Determinations in Section III, Subsection (B)(1), Environmentally-Beneficial Test of the attachment in the July 1, 1994 Seitz Memorandum, states:

> "Unless information regarding a specific case indicates otherwise, the types of pollution control projects listed in III. A. 1. above can be presumed, by their nature, to be environmentally beneficial."
>
> Section III, Subsection (A)(1) (Add-On Controls and Fuel Switches) states, "In the WEPCO rulemaking, EPA found that both add-on-emissions control projects could be considered to be pollution control projects... EPA affirms that these types of projects are appropriate candidates for a case-by-case exclusion as well. The projects include:...
>
> - flue gas recirculation, *low NO_x burners* (emphasis added), selective non-catalytic reduction and selective catalytic reduction for NO_x;..."

IDEM, OAQ has the authority to approve a pollution control project on a case-by-case basis. The "WEPCO" rule is for electric steam generating units. However, IDEM, OAQ has the authority to approve pollution control projects for "large affected units" or any other source category pursuant to the July 1, 1994 Seitz Memorandum.

An air pollution control project cannot under any circumstances contribute to a violation of a national ambient air quality standard (NAAQS), PSD increment, or an air quality related value (AQRV) in a

class I area.

As a result, IDEM, OAQ required Alcoa to submit dispersion modeling of CO on August 22, 2002. Subsequently, IDEM OAQ, determined that there would be no impact on the NAAQS as a result of this modification.

See the Responses 1 - 10 to Alcoa's Comments 1 - 10 for changes that have been made to ensure that this pollution control project is environmentally beneficial.

In addition to the information supplied in Response 3 to Alcoa's Comment 3, Boiler #4 and the addition of SCR was not included in Alcoa's application for this significant source modification that involved or applied to Boiler #1 - #3 only. Since Boiler #4 has been removed from this significant source modification, any issues regarding Boiler #4 will not be addressed in this Addendum to the TSD.

The cite 40 CFR 60.16(e) in the TSD for Subpart A should have been 40 CFR 60.14(e).

As discussed throughout this Addendum, Boiler #4 has been removed from this modification. Therefore since the Part 70 Operating Permit for the entire source has not yet been issued, the conditions from CP 173-2087-00002, issued on December 9, 1991, applicable to Boiler #4 still apply.

Comment 5:

Unlawful waiver of Major Modification PSD

A-V is undeniably a 42 USC 7479(1) carbon monoxide (""CO"") source. Whenever such desires a modification that will cause a 40 CFR 52.21(b)(23)(i) significant emission increase of CO of 100 tons per year, then the PSD process is mandated. DEM states on p. 9 of the 16275 TSD that the proposed modification will result in an increased potential to emit of some 1,707 tpy CO. This, coupled with DEM''s faulty texts saying PSD is inapplicable plus a failure to require Best Available Control Technology (""BACT,"" a clever legal term wherein best does not mean best, see 42 USC 7479(3)) to this CO increase is clear error.

16275 must be completely redrafted with appropriate BACT for CO.

Comment 6:

Oxidation catalyst

The 1,707 tpy CO increased potential and BACT obligation reasonably would lead to the imposition of an oxidation catalyst as a primary control element. The collateral public health (42 USC 7479(3) environmental impact) benefit of such catalyst converting legion hazardous air pollutants and volatile organic compounds (ground-level ozone precursors) into more benign carbon dioxide and water must be considered. Any redraft with no such identification and quantification must be found to be clear error.

Comment 7:

CO Continuous Emission Monitoring

The Federal Clean Air Act is not to be based on benevolence, it is to be based on reasonable requirements. ""(b)"" of 16275 TSD p. 15 is not a part of the permit text. The CO continuous

emission monitors (""CEM"") could be withdrawn by A-V at any time. Obviously the potential 1,707 tpy CO increase reasonably requires that CO CEM be a permit obligation of any granted modification. Further the CO CEM requirement should be imposed immediately, not when (or if) a 40 CFR 70 permit might be issued. 40 CFR 64.10(a)(2) makes clear that delay until then is not required.

Responses 5, 6, and 7:

To reiterate, Case-By-Case Pollution Control Project Determinations in Section III, Subsection (B)(1), Environmentally-Beneficial Test of the attachment in the July 1, 1994 Seitz Memorandum, states:

> "Unless information regarding a specific case indicates otherwise, the types of pollution control projects listed in III. A. 1. above can be presumed, by their nature, to be environmentally beneficial."
>
> Section III, Subsection (A)(1) (Add-On Controls and Fuel Switches) states, "In the WEPCO rulemaking, EPA found that both add-on-emissions control projects could be considered to be pollution control projects... EPA affirms that these types of projects are appropriate candidates for a case-by-case exclusion as well. The projects include:...
>
> - flue gas recirculation, ***low NO_X burners*** (emphasis added), selective non-catalytic reduction and selective catalytic reduction for NO_X;..."

This section also states the following:

> "While because of the case by-case nature of projects it is not possible to list all factors which should be considered in any particular case, several concerns can be noted."
>
> "First, pollution control projects which result in an increase in non-targeted pollutants should be reviewed to determine that the collateral increase has been minimized and will not result in environmental harm."
>
> "Minimization here does not mean that the permitting agency should conduct a BACT-type review or necessarily prescribe add-on control (CO catalyst) equipment to treat the collateral increase."
>
> "Rather, minimization means that within the physical configuration and operation standards usually associated with such a control device or strategy, the source has taken reasonable measures to keep any collateral increase to a minimum.
>
> "It is EPA's experience, however, that most projects undertaken to reduce emissions, especially add-on controls and fuel switches, result in concurrent reductions in air toxics... Consequently, unless there is reason to believe otherwise, permitting agencies may presume that such projects by their nature will result in reduced risks from air toxics."

IDEM, OAQ has determined that Alcoa does not need to install a CO catalyst to minimize the increase in CO emissions. Alcoa indicated on page 55 of their National Ambient Air Quality Standard (NAAQS) dispersion modeling of CO that the emission rates from Stack #1 and Stack#2 are 288.48 pounds per hour and 299.52 pounds per hour, respectively. IDEM, OAQ subsequently, determined based on the information provided in the dispersion modeling for CO, that this pollution control project would have no impact on the NAAQS for CO. Furthermore, the manufacturer's guarantee for the low NO_X burners with over fire air is 239.7 pounds of CO per hour per stack.

A comparison of the emission rate used in the dispersion modeling with that guaranteed by the manufacturer follows:

Modeled Stack 241 CO emissions = (288.48 pounds/hour x 8760 hours/year) / (2000 pounds/1 ton) = 1,263.54 tons of CO per year.

Modeled Stack 242 CO emissions = (299.53 pounds/hour x 8760 hours/year) / (2000 pounds/1 ton) = 1,311.9 tons of CO per year.

Emission Limit for CO emissions = (239.7 pounds/hour x 8760 hours/year) / (2000 pounds/1 ton) = 1049.9 tons of CO per year per stack

Total modeled Stack 241 & 242 CO emissions = 1,263.54 tons of CO per year + 1,311.9 = 2,575.44 tons of CO per year

Total Manufacturer's Guaranteed Stack 241 & 242 CO Emissions = 1,049.9 tons of CO per year + 1,049.9 tons of CO per year = 2,099.8 tons of CO per year

Therefore, the CO emission rate used in the dispersion modeling was conservative by 475.63 tons per year of CO.

Condition D.1.1 ensures that Alcoa will operate the low NO_X burners in accordance with this manufacturer's guarantee of 239.7 pounds of CO per hour per stack.

Therefore, the source is not required to install BACT for Boilers #1 - #3 and addition of the low NO_X burners to Boilers #1 - #3 does not constitute a major PSD modification.

Condition 9 of CP 173-2087-00002, issued on December 9, 1991, required the Permittee to install and operate CEMS for NO_X, SO_2, and CO_2 or O_2. The source subsequently installed a CEMS for CO_2 not CO in order to comply with this requirement. Alcoa's ability to conduct RATA tests for CO, in combination with Conditions D.1.1 and D.1.11(a) (now Condition D.1.12(a)), are sufficient compliance measures and it is not necessary for Alcoa to install a CEMS for CO. Furthermore, the combination of CEMS and flow data, Condition D.1.1, and the stack testing requirement of proposed in Condition D.1.11(a) (now Condition D.1.12(a)), ensures that CO emissions will be minimized. Therefore, the CO conditions in this significant source modification will remain unchanged.

Comment 8:

Hazardous air pollutants

The formaldehyde (""HCHO"") potential to emit disclosure of 0.008 tpy on 16275 TSD p. 5 and 0.0078 tpy on p. 3 of Appendix A of the 16275 TSD must be viewed as being false, perhaps by a factor exceeding 1,300. HCHO, like CO, is a product of incomplete combustion——something that is aggravated by the proposed modification. There remains strong reason to believe that if so modified, the sum of the Unit 1 - 3 increase of HCHO emissions would exceed 10 tpy and would consequently invoke 42 USC 7412 maximum achievable control technology requirements. If A-V desires synthetic minor status for HCHO, then as a minimum, quarterly compliance tests must be imposed with a limit on the stack 241 and 242 total of less than 1.9 pounds HCHO per hour as the test is somewhat difficult and has a large measurement uncertainty. To reasonably provide data to a surrogacy database, a valid CO measurement must be representative in time and circumstance to all HCHO measurements.

Comment 9:

Measurement uncertainty

Here is a situation that must not be allowed by a minor or synthetic minor source: 1) a source operates within all numeric measured permit conditions, and 2) while operating in accordance with point 1, the source actually emits 10 or more tpy of HCHO.

For example, there may be a 9.99 tpy HCHO limit controlled by quarterly stack testing. There is measurement uncertainty in the stack gas volume rate flow and in the stack gas HCHO mass per unit volume concentration. With only a 6% uncertainty in both of the measurements, there is a possibility of 9.99 x 1.06 x 1.06 = 11.2 tpy HCHO emission——a violation. There is of course no law of physics that prohibits such a cumulation of measurement uncertainty.

Thus, permitting authorities are reasonably required to identify measurement uncertainties for each portion of a measurement and to then subtract all such possible cumulative uncertainty prior to establishing a limit wherever crossing a threshold would cause a different type of permit to be obligated. Therefore, for example, if there was found to be possible measurement uncertainty of 4% in the stack gas volume rate flow and 15% in the stack gas NOx mass per unit volume concentration; then this limit would protect a 9.999 tpy cap: a limit that the cumulation of the HCHO in every 12 consecutive month period not exceed 8.35 tpy. 8.35 x 1.04 x 1.15 = 9.987

The source has the full privilege of requesting higher limits that approach asymptotically closer to the 42 USC 7412 threshold values when the source submits suitably scientific proof that it has the ability to reduce a measurement uncertainty.

Responses 8 and 9:

The manufacturer, Babcock & Wilcox, of the low NO_X burners for this proposed modification, as well as John Zink Company (Todd Combustion) and the US EPA, Office of Air Quality Planning and Standards (OAQPS), Combustion Group were contacted regarding the effect that the installation of low NO_X burners will have on the emission rate of volatile organic compounds, specifically formaldehyde. While the consensus was that the emissions of volatile organic compounds should not increase significantly compared to the emissions without low NO_X burners, none of the organizations contacted, could provide emission factors for formaldehyde when combusting natural gas with low NO_X burners.

In addition, neither AP-42 nor Fires v. 6.23 shed any light on formaldehyde emission factors for natural gas combustion with low NO_X burners.

Chapter 1.4 of AP-42 cites a formaldehyde emission factor of 0.075 pounds per million cubic feet of natural gas combusted for natural gas-fired boilers rated at greater than 100 million British thermal units per hour. For Boiler #1 - #3, rated at a total of 4,071 million British thermal units per hour, the AP-42 emission factor results in a potential to emit formaldehyde of 1.34 tons per year, assuming 100% natural gas-fired combustion. Although, the potential to emit formaldehyde based on the AP-42 emission factor is less than ten (10) tons per year, the AP-42 emission factor may not accurately represent formaldehyde emissions using the proposed low NO_X burners.

However, the 1995 Edison Power Research Institute (EPRI) Emission Factor Handbook, which Alcoa uses to calculate combustion organic species emissions from coal emissions, shows that the emission factor for formaldehyde is 2.6 pounds per trillion British thermal units heat input. Coal is the primary fuel used in Boilers #1 - #3 even though the boilers are capable of combusting both coal and natural gas. Based on this EPRI emission factor for coal, the potential to emit formaldehyde

from Boilers #1 - #3, both before and after the installation of low NO_X burners, is 0.046 tons per year.

Furthermore, since this modification is neither constructing new facilities nor reconstructing existing facilities, the requirements of MACT do not apply to this modification.

Therefore, no changes to the proposed permit are necessary.

Comment 10:

Unit 4 modification authority

PCPE is not to be *carte blanch* for construction (modification).

Absent permit control, there is no assurance that adding Selective Catalytic Reduction (““SCR””) equipment on Unit 4 would be 40 CFR 52.21(b)(2)(iii)(h) environmentally beneficial. SCR is used to reduce NOx emissions, but as a result of the use of SCR some ammonia (““NH3””) is emitted as a function of SCR having a reagent intentionally added which creates NH3. Without 40 CFR 52.21(b)(17) federally enforceable permit conditions, those emissions would be unbounded, and, as a result thereof, Unit 4 could be less environmentally beneficial. DEM apparently gave A-V a private ruling that it could construct SCR equipment on Unit 4. As response to comment, supply all communications from DEM and EPA to A-V that would lead A-V to the conclusion that it may construct SCR on Unit 4.

Comment 11:

Unit 4 modification benefit

A-V is undeniably a 42 USC 7479(1) source of particulate matter having an aerodynamic diameter of no more than 10 microns (““PM10””). Whenever such desires a modification that will cause a 40 CFR 52.21(b)(23)(i) significant emission increase of PM10 of 15 tpy, then the PSD process is normally mandated. In re 16275, the PCPE is claimed. Yet, with no determination based on current knowledge and permit bounds, there can be no presumption that the Unit 4 PCP would be environmentally beneficial.

A-V intends to control the emission of Unit 4 NOx by a method that has an *unlimited* potential to emit NH3. The emission could easily exceed 100 tpy. Precisely what avenues are there to limit NH3 if DEM alleges PCPE grants carte blanch?

> NH_3, NOx, and sulfur dioxide form several prominent ammonium and ammonium hydrogen nitrite, nitrate, sulfite and sulfate compounds which are PM10. DEM knew or should have known that NH3 is a PM10 precursor prior to 23 May 2000.

The Congressional BACT text implicitly commands DEM to consider all that which contributes to PM10. Precisely how was an unlimited NH3 emission considered in a de facto 40 CFR 52.21(b)(2)(iii)(h) determination that A-V’’s Unit 4 modification is not less environmentally beneficial?

At 67 FR 39606 (10 June 2002) ““D.,”” EPA clearly said NH3 was meant to be a precursor to PM2.5 as stated 23 May 2000 via 65 FR 33269 *et seq*. PM2.5 is PM having an aerodynamic diameter of no more than 2.5 microns, and it is all PM10. Did DEM or A-V object to that becoming regulation? It appears from response to comment, 67 FR 39604 through 396607 (10 June 2002) that no commenter impeached the fact that PM10 *which results from* NH3 is a reality.

Thus it is clear error that DEM has not evaluated the harm of A-V emitting unlimited NH3 as a PM10 precursor.

The additional atmospheric PM10 on or near A-V, a pollutant subject to regulation under 42 USC Chapter 85, as a result of DEM permitting an excess of NH3 within, is an unrefutable BACT ""environmental impact"" within the law and regulation.

> ""The term ''best available control technology'' means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this chapter emitted from *or which results from* any major emitting facility, which the permitting authority, on a case- by-case basis, taking into account energy, *environmental,* and economic *impacts* and other costs, determines is achievable for such facility...."" (42 USC 7479(3) emphasis added)

The detailed U.S. Congressional law, which reasonably is superior to the 40 CFR 52.21(b)(12) administrative regulation, does not require that the ""pollutant subject to regulation,"" the PM10, be emitted to be considered as an impact that must be analyzed and considered. The law, having the conjunction or, thus simply requires that *all* of the PM10 *which results from* a major emitting facility (A-V) become BACT analysis and BACT limit obligations. Obviously, an unlimited NH3 emission cannot be found to be something that makes Unit 4 anything other than less environmentally beneficial.

The knowledge date of NH3 being a PM10 precursor vastly predates 23 May 2000. The or which results from Congressional text date vastly predates 23 May 2000. The date of BACT applicability is the later of the two dates (knowledge and law). Thus, all of the dates in 67 FR 39602 *et seq.* (10 June 2002) that follow 23 May 2000 are not relevant to the BACT obligation that was created by the knowledge date more than two years previously. In this matter, there is no need to identify the date other than to reasonably show, as I have, that it preceded the date that DEM published 16275.

The fact that the *or which results from* phrase is not within 40 CFR 52.21(b)(12) is not relevant, as the Congressional definition is sufficiently detailed that no intent by Congress to grant to the EPA Administrator a privilege of superceding the Congressional definition can be inferred.

Thus DEM''s failure to account for the environmental harm of an unlimited NH3 emission related creation of PM10 and to require minimal emission of NH3 is clear error, and A-V has no right to construct the Unit 4 modification with perceived PCPE authority.

Comment 12:

Determination request

I formally request a 40 CFR 52.21(b)(2)(iii)(h) environmental benefit determination for A-V Unit 4 SCR modification including: 1) the specific minimum tpy NOx to be destroyed within the SCR system (NOx in less NOx out), 2) the specific maximum tpy of NH3 reagent (or equivalent) that may be admitted to the SCR system, 3) the specific tpy NH3 ""slip emission"" to be permitted while achieving 1., 4) the specific mechanism by which DEM would obligate A-V to achieve 3., and 5) the reasonably estimated amount of PM10 that may be created as a result of 3.

Comment 13:

Obviously an unlimited NH3 emission cannot be found to be environmentally beneficial, and in order to invoke regulatory control, DEM must revoke any applicability of PCPE, order construction halted, and obligate the normal PSD process which would have the BACT invocation at 40 CFR 52.21(b)

(23)(i) significant emission increase of PM10 of 15 tpy.

No doubt there will be argument by A-V alleging a PM10 decrease, rather than an increase. As SO2, NOx, and carbon dioxide are mostly anion sources, the subtraction of the NOx will not be expected to have much decreasing effect on the production of ionic PM10 as there will remain a huge surplus anion availability. The addition of NH3, a cation source in a cation scarce environment, will be expected to have a considerable increasing effect on the production of ionic PM10.

Comment 14:

SCR can be of value

It is environmentally beneficial in some circumstances to use SCR for NOx reduction. Those circumstances exist only where there is: 1) considerable physical control (modulatable reagent admission valves, continuous NH3 emission system, computer control, et al.), 2) considerable administrative control (NH3 pounds per BBTU and NH3 concentration limits, reporting requirements, compliance monitoring, effective punishment for non-compliance, et al.), and 3) an emitted NH3 concentration of less than 2 parts per million by volume on a dry basis adjusted to 15% oxygen averaged over a rolling 3-hour period.

Comment 15:

State implementation plan illumination

63 FR 57356 *et seq*. (27 October 1998), 183 pages of rather heavy reading; a variety of subsequent FR texts, such as the 79-page 64 FR 28250 *et seq.* (25 May 1999); and a variety of IAC texts apparently command (separately) the owners and operators of the A-V Units 1 - 3 and Unit 4 to reduce NOx emissions during ""ozone season,"" 1 May through 30 September in some future years. Please detail those commandments and their citations. Identify with particularity what is a direct federal ""section 126"" obligation (if any) and what is an obligation imposed by Indiana as a ""discretion to select the mix"" option so as to meet a summation obligation. See:

> Both the NOx SIP call and the section 126 petitions are designed to address ozone transport through reductions in upwind NOx emissions. However, the EPA''s response to the section 126 petitions differs from EPA''s action in the NOx SIP call rulemaking in several ways. In today''s NOx SIP call, EPA is determining that certain States are or will be significantly contributing to nonattainment or maintenance problems in downwind States. The EPA is requiring the upwind States to submit SIP provisions to reduce the amounts of each State''s NOx emissions that significantly contribute to downwind air quality problems. The States will have the *discretion to select the mix* of control measures to achieve the necessary reductions. By contrast, under section 126, if findings of significant contribution are made for any sources identified in the petitions, EPA would determine the necessary emissions limits to address the amount of significant contribution and *[EPA] would directly regulate the sources*. A section 126 remedy would apply only to sources in States named in the petitions. (63 FR 57361 - 57362 (27 October 1998), emphasis added)

Assuming that there is no section 126 federal commandment in Ozone Transport Assessment Group (""OTAG"") Subregion 5, that A-V is in OTAG Subregion 5, that there is section 126 federal commandment in OTAG Subregion 6, and that Vectren has emission units subject to federal commandment in OTAG Subregion 6; then detail the relationships between the Vectren OTAG Subregion 5 and 6 emission units including A-V Unit 4.

Responses 10 through 15:

As stated previously, Boiler #4 has been removed from this significant source modification. See Responses 2, 3, and 4 to Stephen Loeschner's comments and Response 3 to Alcoa's comments.

As indicated in Stephen Loeschner's Comment 15, there is no Section 126 federal commandment in OTAG Subregion 5 in which Boilers #1 - #3 are located. Therefore, Vectren's relationships with Alcoa will not be addressed in regards to this modification.

Furthermore, replacing the existing natural gas burners in Boilers #1 - #3 with low NO_X burners with over fire air does not cause an increase in PM_{10} emissions. Therefore, the requirements of 326 IAC 2-2 and 40 CFR 52.21 are not applicable.

Upon further review, the OAQ has decided to make the following changes to the Significant Source Modification: The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded)**:

Change 1:

IDEM, OAQ has changed Condition C.18(c) and added a heading as follows to ensure that the Permittee is aware of the requirements when a MACT standard becomes applicable to the source and that the Permittee submits a timely initial notification. IDEM, OAQ has removed the requirement to submit an application for a significant permit modification to include the MACT requirements in the Part 70 permit within nine (9) months of the MACT compliance date. The language has been revised because the time period of nine (9) months is beyond the reopening time period allowed by 326 IAC 2-7-9, and a significant permit modification application is only one of the mechanisms that may be used to modify the permit to include the MACT requirements. After IDEM, OAQ receives the initial notification, any of the following will occur:

(a) If three (3) or more years remain on the Part 70 permit term at the time the MACT is promulgated, IDEM, OAQ will notify the source that IDEM, OAQ will reopen the permit to include the MACT requirements pursuant to 326 IAC 2-7-9; or

(b) If less than three years remain on the Part 70 permit term at the time the MACT is promulgated, the Permittee must include information regarding the MACT in the renewal application, including the information required in 326 IAC 2-7-4(c); or

(c) The Permittee may submit an application for a significant permit modification under 326 IAC 2-7-12 to incorporate the MACT requirements. The application may include information regarding which portions of the MACT are applicable to the emission units at the source and which compliance options will be followed.

Part 2 MACT Application Submittal Requirement

C.18 Application Requirements for Section 112(j) of the Clean Air Act [40 CFR 63.52(e)**]** ~~and~~ **[40 CFR 63.56(a)] [40 CFR 63.9(b)] [**326 IAC 2-7-12]

(a) The Permittee shall submit a Part 2 Maximum Achievable Control Technology (MACT) Application in accordance with 40 CFR 63.52(e)(1). The Part 2 MACT Application shall meet the requirements of 40 CFR 63.53(b).

(b) Notwithstanding paragraph (a), the Permittee is not required to submit a Part 2 MACT Application if the Permittee no longer meets the applicability criteria of 40 CFR 63.50 by the

application deadline in 40 CFR 63.52(e)(1). For example, the Permittee would not have to submit a Part 2 MACT Application if, by the application deadline:

(1) The source is no longer a major source of hazardous air pollutants, as defined in 40 CFR 63.2;

(2) The source no longer includes one or more units in an affected source category for which the U.S. EPA failed to promulgate an emission standard by May 15, 2002; or

(3) The MACT standard or standards for the affected source categories included at the source are promulgated.

(c) Notwithstanding paragraph (a), **pursuant to 40 CFR 63.56(a),** the Permittee shall comply with an applicable promulgated MACT standard, including the initial notification requirements of the MACT standard, in accordance with the schedule provided in the MACT standard, if the MACT standard is promulgated prior to the Part 2 MACT Application deadline. ~~If a MACT has been promulgated and the source is subject to the MACT, the Permittee shall submit an application for a significant permit modification under 326 IAC 2-7-12 no later than nine (9) months prior to the compliance date for the MACT. The application should include information regarding which portions of the MACT are applicable to the emission units at the source and which compliance options will be followed. If a permit renewal application is due before the date that a significant permit modification application would be due, the Permittee shall include the required information in the renewal application in lieu of submitting an application for a significant permit modification.~~ **The MACT requirements include the applicable General Provisions requirements of 40 CFR 63, Subpart A. Pursuant to 40 CFR 63.9(b), the Permittee shall submit an initial notification not later than 120 days after the effective date of the MACT, unless the MACT specifies otherwise. The initial notification shall be submitted to:**

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

United States Environmental Protection Agency, Region V
Director, Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Change 2:

The subheadings on the CO Quarterly Report Form have been changed to clarify that reporting is required for Stacks 241 and 242 as follows:

Month	Carbon Monoxide Emissions (tons per stack)		Carbon Monoxide Emissions (tons per stack)		Carbon Monoxide Emissions (tons per stack)	
	Stack 241 This Month	**Stack 242 This Month**	**Stack 241** Previous 11 Months	**Stack 242 Previous 11 Months**	**Stack 241** 12 Month Total	**Stack 242 12 Month Total**

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Significant Source Modification

Source Background and Description

Source Name:	**Alcoa Power Generating Inc. - Warrick Power Plant**
Source Location:	**4700 Darlington Road, Newburgh, Indiana 47630**
County:	**Warrick**
SIC Code:	**4911**
Operation Permit No.:	**T 173-6630-00002**
Operation Permit Issuance Date:	**Not Yet Issued**
Significant Source Modification No.:	**SSM 173-16275-00002**
Permit Reviewer:	**Michael S. Schaffer**

The Office of Air Quality (OAQ) has reviewed a modification application from Alcoa Power Generating Inc. - Warrick Power Plant, formerly known as Alcoa Generating Corp. - Warrick Power Plant relating to the installation of low NO_X burners to control NO_X in Boilers #1 - #3. This modification involves the following emission units:

(a) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #1, installed in April 1960, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners for NO_X control, exhausting to Stack 241, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(b) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #2, installed in January 1964, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners for NO_X control, exhausting fifty percent (50%) to Stacks 241 and 242, each, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(c) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #3, installed in October 1965, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and to be equipped with low NO_X burners for NO_X control, exhausting to Stack 242, heat input capacity: 1,357 million British thermal units per hour, heat output capacity: 144 megawatts.

(d) One (1) pulverized dry bottom wall-fired boiler, identified as Boiler #4, installed before 1971, combusting bituminous coal and/or natural gas, equipped with an electrostatic precipitator for PM control and currently constructing selective catalytic reduction for NO_X control, exhausting to Stack 243, heat input capacity: 2,827 million British thermal units per hour, heat output capacity: 300 megawatts.

History

On September 24, 1998, EPA finalized a rule (known as the NO_X SIP Call) requiring 22 states and the District of Columbia to submit State Implementation Plans that address the regional transport of ground-level ozone. By improving air quality and reducing emissions of nitrogen oxides (a precursor to ozone formation known as NO_X), the actions directed by these plans will decrease the transport of ozone across state boundaries in the eastern half of the United States. This rule

requires emission reduction measures to be in place by May 31, 2004. As a result, Alcoa Power Generating Inc. - Warrick Power Plant is installing low NO_X burners as a result of the NO_X SIP Call. Alcoa Power Generating Inc. - Warrick Power Plant (Plt ID 00002) provides electricity to Alcoa, Inc. - Warrick Operations (Plt. ID 00007), a primary aluminum reduction plant. The low NO_X burners are being installed in order to reduce NO_X emissions during the ozone control season (May 1 through September 30). Alcoa Power Generating Inc - Warrick Power Plant will operate the low NO_X burners only during the ozone control season. However, under a "pollution control project", a showing of reduction in NO_X emissions for the entire year is necessary, and it is Alcoa Power Generating Inc. - Warrick Power Plant's choice of how that reduction will be accomplished.

Pursuant to PSD construction permit CP 173-2087-00002, issued on December 9, 1991, Condition 9 required that NO_X emissions from Boilers #1 - #4 be limited to 26,080 tons per year. Alcoa Power Generating Inc. - Warrick Power Plant has decided to include Boiler #4 which is jointly owned by Alcoa Power Generating, Inc. and Vectran Inc. in this modification only to justify that the installation of low NO_X burners to Boilers #1 - #3 should be considered an air pollution control project.

Boiler #4 with an output rating of 300 megawatts represents forty-one percent (41%) of the total output rating of Boilers #1 - 4 of 732 megawatts. Furthermore, NO_X emissions for the entire year must be reduced to define this modification as a pollution control project pursuant to 326 IAC 2-1.1-1(13)(A)(iii) and 326 IAC 2-2.5-1. Therefore, the NO_X limitation of 26,080 tons per year in CP 173-2087-00002, issued on December 9, 1991, for the four (4) boilers will be reduced for Boilers #1 - #3 by forty-one percent (41%) to 15,391 tons per year and then further reduced to 11,555 tons per twelve (12) consecutive month period with compliance determined at the end of each month to define this modification as a pollution control project.

To ensure that Boiler #4's NO_X emissions will not increase as a result of the Boilers #1 - #3 limit Alcoa Power Generating Inc. - Warrick Power Plant and Vectran Inc. has elected to limit Boiler #4 to 10,689 tons per twelve consecutive month period with compliance determined at the end of each month. The NO_X limit for Boiler #4 is consistent with the forty-one percent (41%) reduction of 26,080 tons per year that was used in conjunction with the reduction in NO_X emissions to define this modification as an air pollution control project.

Note that the source is currently installing selective catalytic reduction to Boiler #4. An approval was not necessary for the construction of that control device because there will be no emissions increase as a result of installation of selective catalytic reduction. The installation of the selective catalytic reduction to Boiler #4 is also a result of the NO_X SIP Call.

Reduction in NO_X emissions limitations are determined as follows:

300 MW (Boiler #4) / 732 MW (Boilers #1 - #4) = 41.0%,

NO_X Limit for Boilers # 1- #3 =

Boilers #1 - #4 limit - (41% x Boilers #1 - #4 limit) - |NO_X emissions reduced| =

26,080 - (26,080 x 41%) - |-3,836 (shown on Page 2 of 3 of Appendix A)| = 11,555 tons per year;

NO_X limit for Boiler #4 = (41% x Boilers #1 - #4 limit) = 26,080 x 41% = 10,689 tons per year

Alcoa Power Generating Inc. - Warrick Power Plant anticipates construction to begin on Boilers #1, #2, and #3 on September 27, 2003, April 21, 2003, and October 28, 2002, respectively. Operation is expected to begin on October 20, 2003, May 13, 2003, and November 19, 2002 for Boilers #1, #2 and #3, respectively.

Increased Utilization

The addition of low NO_X burners to Boilers #1 - #3 will not contribute to an increased utilization of upstream or downstream units because the addition of low NO_X burners to Boilers #1 - #3 will decrease the efficiency of those units. Therefore, the evaluation of increased utilization is not applicable to this modification.

Existing Approvals

The source applied for a Part 70 Operating Permit T 173-6630-00002 on September 19, 1996. The source has constructed or has been operating under the following previous approvals including:

(a) MSM 173-14884-00002, issued on November 1, 2001;

(b) AR 173-11457-00002, issued on December 28, 1999;

(c) AR 173-5155-00002, issued on December 31, 1997;

(d) CP 173-3769-00002, issued on September 12, 1994;

(e) R 173-3467-00002, issued on February 8, 1994; and

(f) CP 173-2087-00002, issued on December 9, 1991.

All terms and conditions from previous approvals issued pursuant to the permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
241	Boiler #1 & 50% of Boiler #2	400	19.4	800,000	300
242	Boiler #3 & 50% of Boiler #2	400	19.4	800,000	300

Recommendation

The staff recommends to the Commissioner that the Part 70 Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on August 5, 2002, Additional information was received on August 21 and 26, and September 9, 2002.

Emission Calculations

See pages 1 and 3 of 3 of Appendix A of this document for detailed emissions calculations. Alcoa Power Generating Inc - Warrick Power Plant will only be required to operate the low NO_X during the ozone control season. However, the emissions calculations for Boilers #1 - #3 reflect the "worst case" potential CO emissions with the low NO_X burners in operation for the entire year. The "worst case" NO_X emissions are associated with the low NO_X burners in operation during the ozone control season (May 1 through September 30) only.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA."

This table reflects the "worst case" PTE of Boilers #1 - #3 with existing federally enforceable limitations. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	**Potential To Emit** (tons/year)
PM	4,065
PM_{10}	2,724
SO_2	91,116
VOC	53.5
CO	2,100
NO_X	15,391
HAPs	**Potential To Emit** (tons/year)
Acetaldehyde	0.0162
Acetophenone	0.003
Acrolein	0.042
Benzene	0.017
Benzo (a) pyrene	0.00001
Benzyl chloride	0.028
Biphenyl	0.540
Bis (2-ethyl) phthalate (DEHP)	0.004
Carbon disulfide	0.002
Chlorobenzene	0.051

HAPs	**Potential To Emit** (tons/year)
Chloroform	0.016
Chrysene	0.00001
Dibenzofuran	0.002
Dibutyl pthalate	0.008
Ethyl benzene	0.008
Fluoranthene	0.00004
Formaldehyde	0.008
Hexane	0.051
Hexachlorobenzene	0.00000002
Hydrochloric acid gas	514
Hydrogen fluoride	71.3
Methyl Chloroform	0.012
Methyl Methacrylate	0.048
Methylene Chloride	0.009
Napthalene	0.016
Perchloroethylene	0.026
Phenol	0.007
Propionaldehyde	0.007
Styrene	0.048
Toluene	0.011
Vinyl acetate	0.007
Vinyl chloride	0.025
o-Xylene	0.009
Antimony	0.013
Arsenic Compounds	0.480
Beryllium Compounds	0.180
Cadmium Compounds	0.030
Chromium Compounds	0.420
Cobalt Compounds	0.150
Copper Compounds	0.300
Manganese Compounds	0.630

HAPs	Potential To Emit (tons/year)
Mercury Compounds	0.090
Nickel Compounds	0.480
Selenium Compounds	4.74
Lead Compounds	25.0
TOTAL	618

Justification for Air Pollution Control Project Determination

The table below shows the reduction of the potential to emit NO_X during the ozone control season due to the installation of low NO_X burners.

Pollutant	NO_X (tons/yr)
Current limited potential emissions for ozone control season (Stacks 241 and 242)	6,452
Limited potential emissions after the installation of low NO_X burners (Stacks 241 and 242)	2,616
Emission Reduction due to installation of low NO_X burners (Stacks 241 and 242)	-3836
*Limited Potential Emissions for the entire year (Boilers #1 - #3)	11,555

* Condition 9 of CP 173-2087-00002, issued December 9, 1991 was adjusted for three (3) of the four (4) boilers to 15,391 tons of NO_X per year and then reduced by 3,836 tons to 11,555 tons per twelve (12) consecutive month period with compliance determined at the end of each month in order to define this modification as an air pollution control project.

Pursuant to 326 IAC 2-1.1-1(13)(A)(iii), an air pollution control project means "any activity or project undertaken at an existing emissions unit which, as its primary purpose, reduces regulated air pollutant emissions from such a unit." The potential to emit NO_X from Boilers #1 - #3 for the entire year will be reduced by installing and operating low NO_X burners. Therefore, installing low NO_X burners in Boilers #1 - #3 will constitute an air pollution control project for the ozone control season.

Justification for Modification

(a) A Part 70 Significant Source Modification is proposed because Alcoa Power Generating Inc. - Warrick Power Plant, is adding low NO_X burners to Boilers #1 - #3 as a pollution control

project pursuant to 326 IAC 2-1.1-1(13)(A)(iii) and 326 IAC 2-2.5-1. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(9).

(b) In order to verify that this modification will be performed in compliance with 326 IAC 2-7-10.5(f)(9), the commissioner shall determine if the installation of low NO_X burners is environmentally beneficial based on the following criteria pursuant to 326 IAC 2-2.5-1(d):

(1) An evaluation of CO emitted before and after the installation of low NO_X burners.

(2) The increase in CO emissions in the project shall be reviewed to determine whether the increase in CO emissions has been minimized and does not result in environmental harm.

(c) To assure that the criteria in paragraphs (b)(1) and (b)(2) will be met, Alcoa Power Generating Inc. - Warrick Power Plant:

(1) Submitted dispersion modeling on August 22, 2002, to show that the increase in CO emissions will not have an impact on the National Ambient Air Quality Standard (NAAQS); and

(2) Has assured that the low NO_X burners will operate in accordance with manufacturer's specification.

Note that emission limits for CO will be placed on Boilers #1 - #3 to ensure that the low NO_X burners will operate as assured by Alcoa Power Generating Inc. - Warrick Power Plant and those emission limits will also render the requirements of 326 IAC 2-2 and 40 CFR 52.21 not applicable.

(d) Since the Part 70 Operating Permit for this source has not been issued yet, the approval of this Significant Source Modification will allow the source to construct and operate the low NO_X burners in Boilers #1 - #3.

Actual Emissions

The following table shows the actual emissions from the entire source. This information reflects the 2000 OAQ emission data.

Pollutant	**Actual Emissions** (tons/year)
PM	-
PM_{10}	2,399
SO_2	91,327
VOC	74
CO	617
NO_X	18,251
HAP (Lead)	Not Reported

County Attainment Status

The source is located in Warrick County.

Pollutant	Status
PM_{10}	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Warrick County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Warrick County has been classified as attainment for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8,760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	Greater than 100
PM_{10}	Greater than 100
SO_2	Greater than 100
VOC	Less than 100
CO	Greater than 100
NO_X	Greater than 100

(a) This existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of one hundred (100) tons per year or more, and it is one of the 28 listed source categories.

(b) These emissions are based upon Alcoa Power Generating Inc. - Warrick Power Plant's annual emission statement.

Potential to Emit of Modification After Issuance

The table below summarizes the change in potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Pollutant	PM (tons/yr)	PM_{10} (tons/yr)	SO_2 (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO_X (tons/yr)	Lead (tons/yr)
Proposed Modification to Boilers #1 - #3	-	-	-	-	2,100	11,555	-
Average Past Actual	-	-	-	-	393	-	-
Existing PSD NO_X Limit Adjusted for Boilers #1 - #3	-	-	-	-	-	15,391	
Net Emissions for Modification	-	-	-	-	1,707	-3,386	-
PSD Significant Level	25	15	40	40	100	40	5

Note that PM, PM_{10}, SO_2, VOC, and lead potential emissions did not change due to the installation of low NO_X burners. NO_X emissions will be reduced due to defining the installation of the low NO_X burners in this modification as an air pollution control project. However, IDEM, OAQ will not required Alcoa Power Generating Inc. - Warrick Power Plant to operate the low NO_X burners to comply with the emission limit.

The net CO emissions were evaluated based on the low NO_X burners being in operation during the entire year which is “worst case” potential. The “worst case” potential CO emissions was used in the above table for evaluating net CO emissions as per Alcoa Power Generating Inc. - Warrick Power Plant’s request.

The net CO emissions of 1,707 tons per year after issuance will be greater than PSD significant level of one hundred (100) tons per year. Pursuant to 326 IAC 2-2.5-1(a), the addition of a pollution control project to an existing source shall not constitute a major modification under 326 IAC 2-2-1(x).

In order to show that the increase in the potential to emit CO will not contribute to a violation of NAAQS, the source submitted a dispersion modeling assessment of CO from Boilers #1 - #3 pursuant to 326 IAC 2-2.5-1(e) and 326 IAC 2-2-5 on August 22, 2002 based on a pounds of NO_X per hour emission rate with the low NO_X burners in operation at any (1) time during the entire year. IDEM, OAQ has reviewed and determined that this modeling shows no impact from the increased CO emissions on the NAAQS. It should be noted that the CO emission rate used in the dispersion modeling was substantially higher (see page 55 of the August 22, 2002 submittal) than the manufacturer’s specification for CO emissions due to the use of low NO_X burners.

This modification to an existing major stationary source is not major because the addition of the low NO_X burners to Boilers #1 - #3 as an air pollution control project as defined by 326 IAC 2-1.1-1(13)(A)(iii), are exempt pursuant to 326 IAC 2-2.5-1, and thus, this modification is a significant source modification pursuant to 326 IAC 2-7-10.5(f)(9). Therefore, pursuant to 326 IAC 2-2 and 40 CFR

52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

Alcoa Power Generating Inc. - Warrick Power Plant has submitted their Part 70 (T 173-6630-00002) application on September 19, 1996. The addition of low NO_X burners to Boilers #1 - #3 is being reviewed under this modification shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

(a) Boilers #1 - #3, constructed before August 17, 1971, modified for natural gas co-fire by CP 173-2087-00002, issued on December 9, 1991 are not subject to New Source Performance Standards, 326 IAC 12, (40 CFR Part 60, Subparts D, Da, Db, and Dc) because Boilers #1 - #4 are not "affected facilities" due to the following:

(1) Boilers #1 - #4, in regards to the addition of the natural gas co-fire, were determined by CP 173-2087-00002, issued December 9, 1991 to be designed to accommodate alternative fuel use pursuant to 40 CFR 60.16(e)(4) Subpart A, and

(2) The addition of the low NO_X burners are being installed for the primary purpose of reducing NO_X emissions and the Administrator has determined the installation of low NO_X burners to Boilers #1 - #3 as environmentally beneficial 40 CFR 60.16(e)(5) Subpart A.

Therefore, the requirements of Subparts D, Da, Db, and Dc do not apply.

(b) The requirements of Section 112(j) of the Clean Air Act (40 CFR Part 63.50 through 63.56) are applicable to this source because the source is a major source of HAPs (i.e., the source has the potential to emit ten (10) tons per year or greater of a single HAP or twenty-five (25) tons per year or greater of a combination of HAPs) and the source includes one or more units that belong to one or more source categories affected by the Section 112(j) Maximum Achievable Control Technology (MACT) Hammer date of May 15, 2002. This rule requires the source to:

(1) Submit a Part 1 MACT Application by May 15, 2002; and

(2) Submit a Part 2 MACT Application within twenty-four (24) months after the Permittee submitted a Part 1 MACT Application.

The Permittee submitted a Part 1 MACT Application on May 15, 2002. Therefore, the Permittee is required to submit the Part 2 MACT Application on or before May 15, 2004. Note that on April 25, 2002, Earthjustice filed a lawsuit against the US EPA regarding the April 5, 2002 revisions to the rules implementing Section 112(j) of the Clean Air Act. In particular, Earthjustice is challenging the US EPA's 24-month period between the Part 1 and Part 2 MACT Application due dates. Therefore, the Part 2 MACT Application due date may be changed as a result of the suit.

(c) This source is subject to the requirements of 40 CFR Part 72 through 80 (Acid Rain Program). The requirements of this program shall be detailed in the Acid Rain, Phase II Permit. The source received their Acid Rain, Phase II permit (AR 173-5155-00002) on December 31, 1997 and their Opt - In Acid Rain permit (AR 173-11457-00002) on December 28, 1999.

All CEMS and COMS requirements for Boilers #1 through #3 pursuant to 40 CFR Part 72 through 80 and in accordance with 326 IAC 3-5, will be included in this modification.

State Rule Applicability - Individual Facilities

326 IAC 2-2.5-1 (Pollution Control Projects)

(a) Pursuant to 326 IAC 2-1.1-1(13)(A)(iii), IDEM, OAQ has determined that the addition of low NO_X burners to Boilers #1 - #3 is considered an air pollution control project. Pursuant to 326 IAC 2-2.5-1(e), Alcoa Power Generating Inc. - Warrick Power Plant was required to submit dispersion modeling to assess the increased potential to emit CO from the addition of low NO_X burners. Alcoa Power Generating Inc. - Warrick Power Plant submitted the modeling on August 22, 2002. The dispersion modeling showed that there will be no impact on the National Ambient Air Quality Standard for CO.

(b) In order to classify the installation of low NO_X burners as an air pollution control project 326 IAC 2-1.1-1(13)(A)(iii) and to be exempt from major modification status pursuant to 326 IAC 2-2.5-1(a), Alcoa Power Generating Inc. - Warrick Power Plant will reduce NO_X emissions from an adjusted NO_X limit for Boilers #1 - #3 of 15,391 to 11,555 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Therefore, the requirements of 326 IAC 2-2-1(x) do not apply.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

(a) Net CO emissions will increase by a total of 1,707 tons per year, from Boilers #1 - #3. The dispersion modeling to show compliance with National Ambient Air Quality Standard for CO, submitted on August 22, 2002, was based on the manufacturer's specifications for CO emissions when using low NO_X burners. The following CO emission limitations are proposed:

(1) The potential to emit CO through Stacks 241 and 242 shall not exceed 1,049.9 tons per twelve (12) consecutive month period, each, with compliance determined at the end of each month, equivalent to less than 0.118 pounds per million British thermal unit heat input.

(2) Any change or modification that increases the emission rate of CO from Stacks 241 or 242 to more than 239.7 pounds per hour, shall require prior IDEM, OAQ approval.

Note that the 239.7 pounds of CO per hour per stack is in accordance with the manufacturer's specification for the use of the low NO_X burners.

(b) NO_X emissions from Boilers #1 - #3 shall not exceed a total of 11,555 tons per twelve (12) consecutive month period with compliance determined at the end of each month pursuant to 326 IAC 2-2.5-1.

Note that this limit is based on a pollution control project reduction of 3,681 tons per year taken from an adjusted NO_X limit of 15,391 tons per year proportioned from the Boilers #1 - #4 established in Condition 9 of CP 173-2087-00002, issued on December 9, 1991.

(c) NO_X emissions from Boiler #4 shall not exceed 10,689 tons per twelve (12) consecutive month period with compliance determined at the end of each month pursuant to 326 IAC

2-2.5-1.

Note that the limit for Boiler #4 is forty-one percent (41%) of the limit established for Boilers #1 - #4 in CP 173-2087-00002, issued on December 9, 1991.

(d) The sulfur input to Boilers #1 - #4 shall not exceed a total of 79,074 tons per twelve (12) consecutive month period with compliance determined at the end of each month based on Condition 7 of CP 173-2087-00002, issued on December 9, 1991.

(e) Pursuant to Condition 8(a) of CP 173-2087-00002, issued on December 9, 1991, SO_2 emissions from Boilers #1 - #3 shall not exceed a total of 249.5 tons per day with compliance determined at the end of each day.

(f) Pursuant to Condition 8(b) of CP 173-2087-00002, issued on December 9, 1991, SO_2 emissions from Boiler #4 shall not exceed a total of 181.2 tons per day with compliance determined at the end of each day.

Compliance with the above limits renders the requirements of 326 IAC 2-2 and 40 CFR 52.21 not applicable for this source modification.

326 IAC 5-1-3 (Temporary alternative opacity limitations)

(a) Pursuant to Condition 4 of CP 173-2087-00002, issued on December 9, 1991, the following special temporary exemptions for Boilers #1 - #3 were granted and will be carried over into this modification:

(1) During boiler startup opacity may exceed forty percent (40%) for a period up to six (6) hours (from the first time of the first exceedance) or until the flue gas temperature enters the electrostatic precipitator reaches six hundred degrees Fahrenheit (600EF), whichever comes first.

(2) During boiler shutdown opacity may exceed 40% for a total of sixty (60) six (6) minute periods during the six (6) hours interval following the de-energization of the electrostatic precipitator.

(3) During blowing of boiler tubes or air heaters on either Boilers #1 or #2, visible emissions on Stack 241 may exceed forty percent (40%), but not sixty percent (60%) for a total of three (3) six (6) minute average periods per unit per shift.

(4) During blowing of boiler tubes or air heaters on either Boilers #2 or #3, visible emissions on Stack 242 may exceed forty percent (40%), but not sixty percent (60%) for a total of three (3) six (6) minute average periods per unit per shift.

(b) Pursuant to Condition 4(b) of CP 173-2087-00002, issued on December 9, 1991, the following special temporary exemptions for Boilers #4 are granted and will be carried over into this modification:

(1) During boiler startup opacity may not exceed forty percent (40%) for a period of up to six (6) hours (from the time of the first exceedance) or until the flue gas temperature enters the electrostatic precipitator reaches two hundred ninety degrees Fahrenheit (290EF), whichever comes first.

(2) During boiler shutdown opacity may exceed forty percent (40%) for a total of forty-five (45) six (6) minute periods following the de-energization of the electrostatic precipitator.

326 IAC 6-2-3 (Particulate Emissions Limitations for Facilities Constructed prior to September 21, 1983)

The boilers at Alcoa Power Generating Inc. - Warrick Power Plant were constructed before June 8, 1972 in Warrick County and must comply with the PM emission limitation of 326 IAC 6-2-3, formerly 326 IAC 6-2.1. Pursuant to Condition 5 of CP 173-2087-00002, issued on December 9, 1991, the particulate matter limitation for Boilers #1 - #3 shall not exceed 0.228 pounds per million British thermal unit heat input.

326 IAC 7-4-10 (Warrick County Sulfur Dioxide Emission Limitations)

(a) Pursuant to 326 IAC 7-4-10(a) and Condition 6 of CP 173-2087-00002, issued on December 9, 1991, sulfur dioxide emissions from each boiler shall not exceed 5.11 pounds per million British thermal unit heat input.

(b) Pursuant to Condition 11 of CP 173-2087-00002, issued on December 9, 1991, in order to comply with the SO_2 emission limit established in 326 IAC 7-4-10(a), a report of daily weighted average and thirty (30) day rolling weighted average sulfur dioxide emissions rates (in pounds per million British thermal units) shall be submitted within thirty (30) days after the end of the quarter being reported. Records of the data required to calculate the daily weighted average and thirty (30) day rolling weighted average sulfur dioxide emission rates shall be retained at the station for two (2) years.

326 IAC 10-4 (NO_X Budget Trading Program)

(a) Pursuant to 326 IAC 10-4-2(27), each of the Boilers #1 - #3 is considered a “large affected unit” because it commenced operation before January 1, 1997, has a maximum design heat input greater than two hundred fifty million (250,000,000) British thermal units per hour and did not serve a generator producing electricity for sale under a firm contract to the electric grid during 1995 or 1996. Pursuant to 326 IAC 10-4-1(a)(2), a “large affected unit” is a NO_x budget unit. Because this source meets the criteria of having one (1) or more NO_x budget units, it is a NOx budget source. The Permittee shall be subject to the requirements of this rule.

(b) Pursuant to 326 IAC 10-4-2(16) Boiler #4 is considered an “electricity generating unit (EGU)” because it commenced operation before January 1, 1997 and served a generator during 1995 or 1996 that had a nameplate capacity greater than twenty-five (25) megawatts that produced electricity for sale under a firm contract to the electric grid. Pursuant to 326 IAC 10-4-1(a)(1), an “EGU” is a NO_x budget unit. Because this source meets the criteria of having one (1) or more NO_x budget units, it is a NOx budget source. The Permittee shall be subject to the requirements of this rule.

(c) Pursuant to 326 IAC 10-4-12(c), the Permittee installed a Continuous Emission Monitoring System (CEMS) for NO_X emissions and completed all certification tests as required by 326 IAC 10-4-12(b)(1) through (3). The Permittee shall record, report, and quality assure the data from the monitoring systems on and after May 1, 2003.

326 IAC 21 (Acid Rain Deposition Control SO_2 Limitations)

Pursuant to Condition E.1.4(h) of AR 173-11457-00002, issued on December 28, 1999, sulfur dioxide allowances shall be allocated as follows:

Opt-in SO_2 allowances Allocation Under 40 CFR 74.26 for Boiler #1					
Year	2000	2001	2002	2003	2004
Tons	30,372	30,372	30,372	30,372	30,372

Opt-in SO_2 allowances Allocation Under 40 CFR 74.26 for Boiler #2					
Year	2000	2001	2002	2003	2004
Tons	30,732	30,732	30,732	30,732	30,732

Opt-in SO_2 allowances Allocation Under 40 CFR 74.26 for Boiler #3					
Year	2000	2001	2002	2003	2004
Tons	27,668	27,668	27,668	27,668	27,668

Testing Requirements

(a) Previous Stack Tests

(1) A stack test performed on November 19 and 20, 1996, showed that Boiler #1 was not in compliance with the 0.228 pounds of PM per million British thermal unit heat input emission rate established by Condition #5 of CP 173-2087-00002, issued December 9, 1991. Through an agreed order, a stack test performed on February 23 and 24, 1998, showed that Boiler #1 was in compliance with the same emission rate.

(2) A stack test performed on November 19 and 20, 1996, showed that Boiler #3 was in compliance with the 0.228 pounds of PM per million British thermal unit heat input emission rate established by Condition #5 of CP 173-2087-00002, issued on December 9, 1991.

(3) The 2001 SO_2 relative accuracy test showed that Boilers #1 - #3 are in compliance with the emission rates established by the Opt In Acid Rain Permit AR 173-11457-00002, issued on December 28, 1999.

(b) Proposed Stack Tests

All testing requirements from previous approvals for SO_2 and PM are still required to be performed pursuant to those approvals, but will not be included in this modification because the installation and operation of low NO_X burners does not require additional SO_2 and/or PM testing.

The following new testing requirements are proposed for this modification due to installation of low NO_X burners in Boilers #1 - #3. Testing is being required to verify that the Alcoa

Power Generating Inc. - Warrick Power Plant is in compliance with CO emission rates from Boilers #1 - #3 (Stacks 241 and 242) less than 0.118 pounds of CO per hour per million British thermal units.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

(a) Visible emission notations will not be required by this modification because Alcoa, Power Generating Inc. - Warrick Power Plant operates continuous opacity monitoring systems (COMS) to ensure compliance with 326 IAC 5-1-3 (Temporary alternative opacity limitations).

(b) Additional compliance monitoring for CO, NO_X and SO_2 emissions will not be necessary because Alcoa, Power Generating Inc. - Warrick Power Plant operates continuous emission monitoring systems (CEMS) to ensure compliance with 326 IAC 2-2, 326 IAC 10-4, and 326 IAC 21.

(c) Alcoa Power Generating Inc. - Warrick Power Plant does not currently have compliance monitoring required for the electrostatic precipitators. Since this modification does not involve a change in particulate matter emissions, additional compliance monitoring will not be required for the electrostatic precipitators of Boilers #1 - #4. Any compliance monitoring for electrostatic precipitators shall be added in the Title V Operating Permit.

Conclusion

The construction and operation of low NO_X burners in Boilers #1 - #3 shall be subject to the conditions of the attached proposed Significant Source Modification No. 173-16275-00002.

Appendix A: Emission Calculations

Company Name: Alcoa Power Generating Inc. - Warrick Power Plant
Plant Location: 4700 Darlington Road, Newburgh, Indiana 47630
Significant Source Modification: 173-16275
Plt ID: 173-00002
Permit Reviewer: Michael S. Schaffer
Date: August 5, 2002

Stack 241 exhaust Boiler #1 and 50% of Boiler #2 Stack 242 exhaust Boiler #3 and 50% of Boiler #2
Potential to Emit of Boilers #1 - #3 @ 1,357 mmBtus/hr each

Pollutant	Heat Input Capacity To Stack 241 or Stack 242 (mmBtus/hr)	Emission Factor (lbs/mmBtu)	Potential Emissions (lbs/hr)	Potential Emissions (lbs/yr)	**Potential Emissions through one (1) stack (tons/yr)**	**Potential Emissions through both stacks (tons/yr)**	**Limited Emissions through both stacks (tons/yr)**	
PM	2035.5	0.228	464.09	4065463	**2033**	**4065**	**4065**	
PM-10	2035.5	0.153	310.94	2723861	**1362**	**2724**	**2724**	
SO2	2035.5	5.110	10401.4	91116308	**45558**	**91116**	**91068**	Pursuant to #8 of CP 173-2087-00002
VOC	2035.5	0.003	6.11	53493	**26.7**	**53.5**	**53.5**	
CO	2035.5	0.118	239.7	2099772	**1049.9**	**2099.8**	**2099.8**	
Pb	2035.5	0.0014	2.85	24963	**12.5**	**25.0**	**25.0**	
Uncontrolled NOx emissions during the entire year before modification								
NOx*	2035.5	0.863	1756.84	8938802	4469	8939	8939	
NOx**	2035.5	0.863	1757.00	6451700	3226	6452	6452	
				Total Limited NOx PTE:	***7695***	***15391***	***15391***	

Potential controlled NOx emissions during the ozone control season (May 1 through September 30) and uncontrolled NOx emissions after modification

NOx*	2035.5	0.863	1756.84	8938802	4469	8939	8939	
NOx**	2035.5	0.350	712.43	2616025	1308	2616	2616	
				Total Limited NOx PTE:	***5777***	***11555***	***11555***	

Methodology

Emission Factors were derived from co-firing coal and natural gas

PM emission factor of 0.228 lbs / mmBtu is the allowable emission rate pursuant to CP 172-2087-00002 and the PM-10 emission factor is 67% of the PM emission factor based on test data

Uncontrolled NOx emission was back calculated based on the total limited NOx 15,391 TPY

NOx emission factor for the ozone control season of 0.350 lbs / mmBtu is the emission factor to comply with 326 IAC 2-2.5-1 and the NOx emission factor for the nonozone control season has been back calculated based on a total limited NOx 15,391 TPY

VOC emission factor is based on a combination of AP-42 emission factors and codes provided in the 2001 emission statement

SO2 emission factor is based on the limit established by Condition 6 of CP 173-2087-0002

* during non-ozone control season based on 5088 hours from Oct 1 - April 30

** during ozone control season based on 3672 hours from May 1 - Sept 30

CO Emissions are based on the the low NOx burners operating 8760 hours @ a manufacturer's guarantee emission rate of 239.7 lbs/hr / 2035.5 mmBtus/hr

NOx limit is based on a 41% reduction of the PSD limit in Condition 9 of CP 173-2087-00002 because only Boilers #1 - #3 are included in this modification (Note that there is no limited lb/mmBtu emission rate in Condition 9 of CP 173-2087-00002)

The emissions calculations for Boilers #1 - #3 will reflect the "worst case" potential CO emissions with the low NOx burners in operation for the entire year.

The "worst case" NOx emissions after modification are associated with the low NOx burners in operation during the ozone control season (May 1 through September 30) only.

Potential Emissions in (lbs/hr)= heat input capacity (mmBtu/hr) x emission factor (lbs/mmbtu)

Potential Emissions in (tons/yr) = potential emissions (lbs/hr) x 8760 hours x (1 ton/2000 lbs)

*Potential NOx Emissions in (tons/yr) during non-ozone control season = potential emissions (lbs/hr) x 5088 hours x (1 ton/2000 lbs)

**Potential NOx Emissions in (tons/yr) during ozone control season = potential emissions (lbs/hr) x 3672 hours x (1 ton/2000 lbs)

Appendix A: NOx Emissions Reduction For Ozone Control Season and Net Emissions

Company Name: Alcoa Power Generating Inc. - Warrick Power Plant
Plant Location: 4700 Darlington Road, Newburgh, Indiana 47630
Significant Source Modification: 173-16275
Plt ID: 173-00002
Permit Reviewer: Michael S. Schaffer
Date: August 5, 2002

Limited NOx Emissions Reduction for Ozone Control Season

Limited NOx Emissions from Stacks 241 and 242 for Ozone Control Season Before Modification (tons/yr)	6452
Limited NOx Emissions from Stacks 241 and 242 for Ozone Control Season After Modification (tons/yr)	2616
Total Limited NOx Emissions Reduced for Ozone Control Season (tons/yr)	**-3836**

Total limited NOx Emission for ozone control season (tons/yr) = Limited NOx Emissions for ozone control season after modification (tons/yr) - Limited NOx Emission for ozone control season before modification (tons/yr)
Emission Reduction was done to define this modification as an "air pollution control project" pursuant to 2-1.1-1(13)(A)(iii)

Net Emissions For Boilers #1 - #3

Pollutant	2000 Actual Emissions (tons/yr)	2001 Actual Emissions (tons/yr)	Average 2000 and 2001 Actual Emissions (tons/yr)	Potential to emit of the Modified Boilers (tons/yr)	**Net Emissions from modification (tons/yr)**
PM	N/A	N/A	N/A	4065	N/A
PM10	N/A	N/A	N/A	2724	N/A
SO2	N/A	N/A	N/A	91116	N/A
VOC	N/A	N/A	N/A	53.5	N/A
NOx (stack 241)	N/A	N/A	N/A	5777	**-1918**
NOx (stack 242)	N/A	N/A	N/A	5777	**-1918**
				Total Net NOx:	***-3836***
CO (stack 241)	206.32	195.30	200.8	1049.9	**849**
CO (stack 242)	191.80	191.90	191.9	1049.9	**858**
				Total Net CO:	***1707***
Pb	N/A	N/A	N/A	25.0	N/A

NOx netting is based on reduction due to air pollution control project
CO netting is based on the manufacturer's guarantee specifications for each stack
N/A stands for not applicable because the potential to emit of the respective pollutants did not change as a result of this modification
Source has not requested netting for NOx because there is not any lb/mmBtu emission rate limit in Condition 9 of CP 173-2087-00002

Appendix A: HAPs Emission Calculations

Company Name: Alcoa Power Generating Inc. - Warrick Power Plant
Plant Location: 4700 Darlington Road, Newburgh, Indiana 47630
Significant Source Modification: 173-16275
Plt ID: 173-00002
Permit Reviewer: Michael S. Schaffer
Date: August 5, 2002

Applicant Supplied HAPs Emissions per boiler

HAP	Potential to emit per boiler (tons/yr)	Total Potential to emit from Boilers #1 - #3 (tons/yr)
Acetaldehyde	0.00540	0.01620
Acetophenone	0.00098	0.00295
Acrolein	0.01400	0.04200
Benzene	0.00580	0.01740
Benzo (a) pyrene	0.00000	0.00001
Benzyl chloride	0.00920	0.02760
Biphenyl	0.01800	0.05400
Bis (2-ethyl) phthalate (DEHP)	0.00140	0.00420
Carbon disulfide	0.00080	0.00240
Chlorobenzene	0.01700	0.05100
Chloroform	0.00540	0.01620
Chrysene	0.00000	0.00001
Dibenzofuran	0.00080	0.00240
Dibutyl pthalate	0.00260	0.00780
Ethlybenzene	0.00280	0.00840
Fluoranthene	0.00001	0.00004
Formaldehyde	0.00260	0.00780
Hexane	0.01700	0.05100
Hexachlorobenzene	0.00000001	0.00000002
Hydrochloric acid gas	171.30000	513.90000
Hydrogen Fluoride	23.77000	71.31000
Methyl Chloroform	0.00400	0.01200
Methyl Methacrylate	0.01600	0.04800
Methylene Chloride	0.00300	0.00900
Napthalene	0.00540	0.01620
Perchloroethylene	0.00880	0.02640
Phenol	0.00240	0.00720
Propionaldehyde	0.00220	0.00660
Styrene	0.01600	0.04800
Toluene	0.00360	0.01080
Vinyl acetate	0.00220	0.00660
Vinyl chloride	0.00830	0.02490
o-Xylene	0.00300	0.00900
Antimony Compounds	0.00440	0.01320
Arsenic Compounds	0.16000	0.48000
Beryllium Compounds	0.06000	0.18000
Cadmium Compounds	0.01000	0.03000
Chromium Compounds	0.14000	0.42000
Cobalt Compounds	0.05000	0.15000
Copper Compounds	0.10000	0.30000
Manganese Compounds	0.21000	0.63000
Mercury Compounds	0.03000	0.09000
Nickel Compounds	0.16000	0.48000
Selenium Compounds	1.58000	4.74000
Lead Compounds	8.32112	24.96337
TOTAL HAPs	**206**	**618**